Call
133
#1-318
#2

tintometry

A.

A maniack, in the Pennsylvania hospital, lately made the following observations:—We that are confined here are only called mad, because our madness does not agree with that of the rest of the world. Every body thinks his neighbor mad, if his pursuits happen to be opposite to his own. His neighbors think the same of him. But then their two kinds of madness do not interfere with each other. Now and then there comes an eccentric man who thinks them all mad; him they catch and lock [illegible] case.

Coll. 133

Harvey Wrightsby

Harrison Wrightsby

Nov 4th 1866

Entomologia Americana
or the
Insects of the United States
from Georgia to Maine

Head Caput
External Characters of the Head
Mouth
Eyes
hemispherical dots Stemmata
feelers or horns. antennae
front space between eyes & mouth frontis
Vertex the crown or summit of the head
throat
Internal
Brain or Medullary Substance

Leg of an Insect is divided
to 4 or 5 parts
Coxa the first joint or haunch
at the base
femur the thigh.
tibia, shank
tarsus, the foot (generally of 5 joints)
unguis the claw.
feet are distinguished by
particular terms as
Cursorii formed for running (most common)
Saltatorii constructed for running
Natatorii employed in swimming

Thorax, the dorsal part of the trunk

Antennae
1 Setaceae, those which gradually become taper towards the extremity
2 Filiformes, such as are of equal thickness throughout
3 Moniliformes, filiform like preceding but consisting of a series of round knobs like a necklace of beads.
4 Clavatae such as gradually increase in thickness from the base and form a club at the end.
5 Capitatae like clavatae increase in thickness towards the extremity but are distinguished from those by the form of the last articulation which is larger and more rounded than the others.
6 Fissiles are like the last, but are divided longitudinally into three or four plates or laminae
7 Perfoliatae are also capitatae but have the head divided horizontally, the plates being connected by a kind of thread passing through their center
8 Pectinatae are those which have lateral appendages, like the teeth of a comb or a plume of feathers as in the moth tribe
9 Aristatae such as have lateral hair which is either naked or furnished with lesser hairs, as in musca

breviores shorter than the body.
longiores longer, ——— do.
mediocres of the same length as the body } all the antennae in the Cerambyces

Wings, alae

Wing cases Elytron Elytra pl.

Wings are called plicatiles when folded at the time the insect is at rest

planae when stretched out without folds & incapable from the structure of the nerves to be folded up.

erectae such as have an erect position when the insect is at rest

patentes like the geometra family of moths & most of the libellula which have the wings expanded horizontally when at rest

incumbentes such as cover in an horizontal manner the superior part of the abdomen when the insect is at rest. These differ from the deflexae in having the outer edges declining towards the sides. like the ridge of an house

reversae are also deflexae with this addition, that the edge of the inferior wings projects from under the anterior part of the superior ones.

dentatae, those with wings indented or scalloped

caudatae those in which one or more of the nerves of the posterior wings extends beyond the margin and forms a process such as occurs in the equites family of papilio and the genus hesperia more remarkable in phalaena argus.

Recticulatae those in which the veins or membranes of the wing form a kind of lattice work as in the genus libellula.

Colours (colores) are named in terms agreably to their common acceptation, but have significant appellations according to the various forms of the spots bands streaks which appear on the wings.

Maculae are spots

punctae .. dots

fasciae .. bands.

strigae .. streaks

lineae .. lines

Ocellus a round spot containing a small spot of a different color in its center.

Stigmata (linnaean term) signifies a spot or anastomosis in the middle of the wing near the anterior margin (conspicuous in most of the hymenoptera & neuroptera)

Stigmates also a term applied to the single or double shaped spot situated in the middle of the anterior wings in many of the moth tribe, in the noctua family, and in some of the Bombyces. most of these terms apply only to the lepidopterous tribe in the markings of those wings the most beautiful colouring prevails

Halteres poisers or balancers appendages peculiar to the diptera order and which with sufficient reason are deemed an essential characters of that tribe. they are longest in the tipulae, diopsis and asilus; in musca scarcely apparent and accompanied by a scale of large size.

the Elytra are sometimes united when properly called elytron
Suture division between the Elytra. some few have no wings under the Elytra diversity of the surface of the Elytra arises from dots raised or depressed protuberances flutings colours and other endless circumstances there furnish excellent generical distinctions & extensively useful in constituting the characters of species.
Wing cases when shorter than the abdomen are termed abbreviata unless they terminate in a transverse line, when they are called truncata. fastigiata when of equal or greater length than the abdomen and terminate in a transverse line serrata when the exterior margin towards the apex is notched or serrated as in some of the buprestis genus. The appearance of the surface is variously distinguished spinosa a term implying that the surface is covered with sharp points or spines; scabra rough; striata marked with slender furrows longitudinally; porcata with elevated longitudinal ridges sulcata with concave ridges

Found on board fences and out houses.

1 Phalangium Opilio? Say.

Sep. 27.

2 The male of this insect is about ⅝ inch long, body of a yellowish red colour, terminating abruptly or blunt shaped marked with brown rings — A small yellow globe suspended by a string below each wing — it has but two wings — head small — eyes dark bluish green legs very long — shade or spot towards the end of each wing — light yellow about the breast —

Female resembles the other in colour. but is about ⅓ larger. and the body terminating in a point

Sep 4 5 or 6 brown spots or rings on the back. which spots are larger than in the male — and the same number of small long spots on each side of the body

3
Sibellula

(6)

4
Sibellula Vulgar names "Devils needle" in Delaware they are known by the name of the "musquitoe hawk" & in Luzerne by the ~~name~~ appellation of the Swamp Angel

Libellula

6

Necrophorus Grandis

Sep. 30 1818.

Interior, Cy

This is an elegant insect being of a brownish black color
inserted in midsight in front of the eyes
the antennae are composed of a long joint next the head terminated by a club
to this succeeds 5 small knobs or beads. the next or end joint is
of an orange color. divided into 4. the outer one being the thickest
the margin of the thorax is broad & flat having a large raised
orange figure on it each shell has two large orange spots
and at the base at the suture they are there are five
joints on all the feet and the four tarsi near the shanks of
the fore feet. are bordered with long orange colored tufts of hair.
underneath on the breast behind the middle thighs it has
a broad shining band hair of a brassy color.
they are very subject to ticks some of them being nearly covered
with them so I have seen them to the number of 70 or one ounce
the shells are shorter than the abdomen covering not more
than 3/4 of the abdomen — the jaws are large & strong —
it has 2 spines at the end of the shanks one longer
than the other — the hind thighs are large flat & curved
and the shanks are remarkably curved — It is supposed
to found about carrion from its remarkably offensive smell.
when taken it a black brown or liquor exudes from behind which
is horribly offensive — the shells have a broad orange
margin bent under —

Liber 7.

Lib 8

9
Scarabeus
Volvens.

12
Galerucella
12 punctata.
Wash. Cat

found me
Sept. 4 1818
a little under
ground Wilkesbarre

15

16 Found on pine boards.

Buprestis
Obrinatus? Say

June 20

17.

Pine Borer
& Slocum

18

19

Larva of.

20 Feed on the leaves of the wild cotton or Milk weed. loose its bright color when dies —

21

jules } Say

22

Humble Bee

25 This Grasshopper is of a bright gamboge yellow shaded or marked on the head back and sides of the thorax with ~~an~~ light olive green eyes large of a dark chesnut brown — hind legs of an orange red with black short spines — ~~wings~~ do not reach within 3/8 of an inch of the vent ——

Large
Yellow
Grasshopper

26

35

Lives in (holes round) the earth: its egg in number are
of a pale yellow colour. about 1/12 of an inch long & 1/36 in

Field
Cricket

36

Domestic
Cricket

37

Famica

38

40 Found on St Johns wort — on approach of a person it drops from the plant to the ground (Lytta nigra Cit) This specie of Lytta appears annually in great numbers — in Luzerne it may be said to be peculiar to the St Johnswort although I have been informed they have been occasionaly found with the Potatoe leaves — They are very powerful as medicin as 2 of them have been known to produce a handsome vesiccation of the size of a spanish dollar experiment with them ——— — are somewhat less than the Potatoe fly ;

Sep. 25.

41 Found on Camomile - female somewhat (female 6/10 male 5/10 inch) Day 1/4 larger.
white blossoms female larger than the male
thorax and shells ochre yellow. with a double black brown dot on the thorax
of the male an a lunule spot or. of the form of the thorax on.
the thorax of the female - both sexes have a large oblong black
brown spot towards the tip of the shells; the body of both male
& female is longer than the shells and the base of each
annulations is marked with a yellow band or edge of a brighter
color than the shells. the body & head & antennae are of a dark raw umber
brown — the antennae of the male are stouter longer & and
curved near the end — they are very common at this season
of the year in Lucerne but are mostly found on the plant above
seldom or any other —

Sep 10. 1814

Aug. 30 1818

42.

43. suppressed Phryganea

44.

45

Hemerobius.
Cornutus

46 supposed Raphidia.

50
Pasalus
Cornutus

4/0 wide
1/4 wide long found in & under. every rotten wood.
light red, Colour Cayd — they are found just beneath the bark of
oak trees in stumps which have been cut down say about 8 years
a specimen was found of a pale yellowish red brown probably just under-
gone the change from the larva — — — —

April 25
1818
28th
found in
numbers

This fly has the eyes brown, large & shining
sides of the body & thorax fringed with dun
coloured or yellowish hairs — wings brown —

55 Dyticus — Water Insect — to live in — admirable construction for the element designed

56 Hover in the roads & paths —

57
Asilus.

58 Found on the Nutmeg melon living on the juices of the plant fruit.

This insect (supposed the same) was found May 13 1818 passing on decayed or rotten beets partly buried in the beets — the elytra are shorter than the body. the insect is black & polished — with 2 pale brownish white spots on each wing case — the upper spot placed near the thorax the under is a other is a round spot on the lower part of the elytra They appear to be fond of the decayed or rotten vegetable which have sweet juices I have found them in rotten beets — & the rotten spots in the muskmellon or Cantaleup

Sep 22 1817

59. Found in the woods and meadows in numbers - the largest species in Penn[a] the nerves of the wings are not so distinctly as the other species, is of a fawn color marbled with blotches in the wings and of a mealy appearance about the breast and head

Sep 22

60 Lays 16 Eggs whitish large for the size of the insect

62 Found hovering over moist places. and nuts & settling in numbers.

65 Washington City

Galeruca?

66 Washington City.

Coccinella.

67 Washn City.
Scarabæus

68 Washington City

69
staphylines

70

71

72

75

76

Bombyx
Cecropia

79.

Sphinx

80

82 Washington City

83 Washington City.

---

84 Washington City

Elater
Undulatus

85

86 Wash^n City

87 Washing^n City

88 Wash^n City.

89
Larva of
Amerostius
Carnutes
in No.
45

90
Lucanus
Elaphus
male?

I am inclined to believe these are two species
one of which is one third larger than the other
both male & female respectively —

very common

The male of the larger species has the jaws broader.
and flatter than the other the head broader & flatter
also as of the thorax and the wingcases — the other
is smaller & a more slender insect the female (91a)
of the latter specie is much smaller. 1/3 less than the other
female the head is flat; the female of the large specie
has the back of the head high & rounded.

The two species or varieties are alike in color

91

supposed to be 2 varieties — of those nearly one 1/3 larger than the other —

Lucanus — The female of the larger species is 1 4/10 of an inch & an inch long

Elaphus. — The female of the smaller — is 1 1/10 of an inch in length —

female)

very common

---

92 Found on the bark of a Rotten dead white pine tree

Dermestes

96 Coccinella. $\frac{1\frac{1}{2}}{10}$ of a pitchy black one long with bright vermillion or carmine red round spots on each elytra. under part black brown the last annulation claret color.

May 24/1818.

97.

98

100 Found on the rose in the flowers of which it causes sad work
Scarabæus
Subspinosus

Rose bug

101
Lamia
Tornator

June 29
1818

pupa in
a cocoon
this day.

Found on the flowers of the wild cotton or milk weed —
in numbers at this season & confined — I believe to this plant
the two sexes resemble each other in color & markings but
the male? is somewhat smaller. the one being $\frac{5}{10}$ the other
$\frac{4\frac{1}{2}}{10}$ long — the head thorax and shells being of a bright or
vermillion red with a small black brown dot at the root of
each antennae, with 4 dark brown dots on the thorax. and six spots on the
shells of a black or purple brown color abdomen purple brown with
a milky tinge — legs of the same color — antenæ dark brown or
brown black. & eyes of the same color

102
Lamia

Enamblyx

105
Trichius

106 Found on the chasselas blanc grape

107. Found on the Chasselas blanc grape vine or sweet water

108

109

This insect is ~~about~~ from 5/10 to 6/100 of an inch long — the antennae next the head one third of it is of a yellowish red color the middle part of a cane color & the remainder dark clove brown, the ~~thighs~~ legs and tarsi & yellowish red — the joints next the body the body head eyes black brown at the base of the thorax there is a triangular cane colerd spot, next the back of the cane colored — the first ~~joint~~ segment next the thorax is dark brown the second yellowish red the upper part of the 3d segment is black brown middle part yellowish red base of it cane colored upper part of the 4th segment black brown base of it cane colored; 5th segment is black brown next cane colored apex blackish brown — wings brown paling into blackish —

110

Vespa Elongata C.

(Long-bellied, yellow-banded wasp.) This insect is about 7/10 of an inch long is remarkable for the length of the belly which projects far beyond the wings, the first 5 segments next the thorax have each a yellow band at their base the other two have none, all the legs & fore part of the thighs are of a pale lemon yellow. the tarsi & hairs pale bister colo. the general color of the insect is of a clove or blackish dark brown eyes antennae ~~that~~ clove brown — wings transparent & brown — found on flowers —

112

Cerambyx
Cylindricus

113.

This is a very rare insect —

611

Red
Calydid

114

Scarabæus
jamaicensis

115

116 (Figured a little too large)

117. Found in Smoke house, on dried meat hams &c. devours insects voracious little animal. about 3/16 of an inch long. great care must be taken that they do not get into a Cabinet or Collection of Insects — carnivorous —

118 Washington City

119.
Tabanus.

120 Supposed to be one of the Geometrae

Cicada Septemdecim

These wonderful & rare visitors made their appearance in 1817. Shortly after the frost was out of the ground in the woods the writer of this observed a vast number of holes in the earth in the woods many of which had a cap of earth over them similar to the top of an oven in some places he counted no less than 50 to 60 holes in the compass of a square yard. these holes did not go perpendicular in the earth but were generally crooked ~~& appeared that~~ the insects or worms had forced their way up through the moist soil until finding no further resistance to their progress they had again descended about 2 feet the fire in the woods had passed over these domes and hardened the clay or earth. on breaking off the dome or part projecting above the surface of the earth the hole about the thickness of a man's little finger became visible Nothing further was observed for nearly 3 weeks when the body of the trees to the height of 4 to 10 feet were covered with the grub casers of the Cicada. they were almost all out of the cases here and there a solitary one had perished in the attempt to extricate itself they were weak and feeble made no noise and seldom attempted to fly their as yet feeble wings in a day or two they began to flutter about and in two or three days more began to be heard

1817.

it was however nearly a week or ten days before they became a very noisy they continued this clamorous nearly 6 weeks longer when their noise gradually declined and in about a week after only a solitary one was here & there heard the whole time from their first appearance to their total disappearance about two months during this period the female had lain her eggs for the above purpose after which they die — these eggs resemble a small white maggot about 1/10 of an inch long and are generally lodged in the pith of the limb; the limbs die from the place where the eggs are deposited and the first high winds bend them down on examining the eggs the evening fall they appear to have increased to 1/6 of an inch and the rudiments of the grub are plainly discovered they are white of the milk white colour they appear in districts — this year in Luzerne about Phila & & none were visible west of the Alleghany. the intermediate districts not having them until 6 or 7 years hence wherever they make their appearance they are sure to come 17 years afterwards the grub casers are nearly of the colour of unburnt yellowish clay. or soil.

The male is nearly 2 inches long wings hyaline with a broad orange or orange colored base rib. the nerves strongly marked at the root. and brown at the upper edge with a purple brown eye spot at the root between the base rib & root of the nerves — eyes & legs of a yellowish red — head thorax & back of a brite or coppery brown color lighter under the belly. the outer edges of the rings of the body have a broad yellowish band —

males only wing & have organs for this purpose at the side

female has no such organs

In the year 1816 in June the swarm of Northumberland Court House in a space of about 2 miles square the sound was so great that I believe a cow bell could not be heard 200 yards off

In the county in the neighbourhood of the county was only exceeded all when assembled the male only make a noise

These insects appeared in great numbers this year doing great damage cutting of the young corn successively planted cutting off young cabbages beans &c. The fly is not known to me, some aperting positively that it is the, blue butterfly and others Mr. T. Cope, that they have seen the Scarabaeus Pilularius & Judge Peters a Sphaeroma Bruei & Phalaena Segula. The only remedy. I know is to dig them up and destroy them they are always found 1/2 or 1 inch deep under the surface where they have been committing depredations

Cut worm.

Caroline Dysart of York County Pa application to the Legislature for reward for discovery of a remedy to the ravages of the cut worm in corn. Journal of Sep. March 1818.

experiment which succeeded to destroy or catch them is to open a hole with a smooth stick aside the corn stalk on which these vermin tumble in & cannot reascend ——— fact that they always commit their depredations in the night — the nocturnal depredators — & retire upon the approach of light into the earth from 1/2 to 2 inches they are great destroyers & in dry seasons of the grass sometimes destroy whole meadows by cutting off the roots of the grass so that you may take up a mouthful of it at a time — they may be found in the night by candle or lanthorn light and are thus destroyed —

Black Cutworm cabbage cutter 1817.

Am. See Journal of Science No 2. article Phalaena Devastator by J. Brace

Hessian Fly.

"We find the fly passes itself between the outer straw or husk and the stalk of the wheat, until it reaches near the first or lower joint, and there, somewhat like a catterpillar on a twig fixes its eggs on the stalk in number from six or eight to fifty; by the growth of them the plant becomes so compressed with the adhesion of the cluster, and weakened to such a degree as not to support its own weight, consequently falls to the ground and the crop is irretrievably lost.

It has been found by observation that the fly deposits their eggs in the fall — If therefore the wheat is suffered to grow into stalk before the cold weather pinches them, as the plant even of this wheat (bearded wheat) is then too tender to resist the spear of the fly, if any it has, or bear the compression of the eggs; or that the eggs deposited at that early period are most likely to injure the stalk in the spring before it has acquired a sufficient degree of firmness. The straw of this wheat appears nearly of the same texture with that of rice and is injured by the fly neither more nor less than it. It seldom injures any but the common wheat — The only remedy appears to consist of seed wheat of a peculiar species" Query what is this species? the bearded?

see Columb. Mag. Feb 1789. gratuitous useful hints

see ditto for August 1788.

124.
Galeruca Cucumeris

This insect is to be found on leguminous plants melon cucumber &c from May to Oct but is chiefly destructive to young cucumber & melon plants before they get their 4 or 5 hairy leaves — This is a most troublesome little animal to the gardiner — Having incredible damage often destroying whole plantation of cucumbers & melons. so that they are obliged to plant them two or three times over. they attack the plant before it has the two rough leaves of any size after which the plant is pretty much out of danger. they cannot bear the heat of the Sun during which they hide under the leaves or in the earth — they generally attack the plant just above ground. cutting away the outer coat and causing it to bleed & loose its juices when the plant soon withers tobacco lime & ashes & are used but generaly with little avail. to protect the young plants from their depredations the only effectual mode I know of is to station a watch and destroy them as fast as they make their appearance and this can be effectualy done by calling in aid the service of the common toad; one or two of these animals. being inclosed in a fence made with boards from 8 or 10 to 12 inches will catch them with their tongues — and soon destroy them let them be ever so numerous —

Cucumber Bug or Fly

*. notice its properties

{ impel scavenger Eels

from May to Oct.

125
Bruchus
Pisi

Pea Bug.

April 1818 Thousands came out

Sep 7. 1818 Thousands came out of the Early pea. Query, what become of these, they cannot overlive the winter? Do the species kept up by those which are in the prussian blues & other later kinds which do not come out until Spring & which I find are now in the maggot state & no appearance of coming to the beg. state this fall.

Hornet

Common
Brown
Wasp.

Yellow
Jacket

129.
Schneumon

130 Washing City.
Scarabaeus
Carolinus

131 Wash^n City
Cetonia
nitida

Goldsmith

132 Washing^n City
Melolontha
punctatata

...la...

...ial
...Log

133 This Caterpillar has a row of 10 minute silver spots on each side of its body — from the rings of its body rich brown colored long hairs projects all round. interminst with a few. whitish hairs these last hairs are about 7/8 of an inch long - the four first rings are covered with black hair — 6 real feet & 10 false feet mouth & jaws a pale yellow color. head black the hairs radiate from rows of low warts round each ring — body of the worm of a brown approaching to black — the last 8 rings are covered with brown hair — hair upon handling easily comes off —

134 Found on the flowers of the Thistle — fragrant or odoriferous
Cimex about 1/2 an inch long or rather longer. 3/8 of an inch broad — back covered with minute spots or holes legs also speckled — the under side of the insect of a dirty pale yellow — edges all round of a flesh colored tint

Sep 18

137. This moth is of a brownish flesh color or brownish buff and the upper wings. and of a pale buff a flesh color on the lower wings — it has a small oval lead colored spot in the center of the upper wings immediately on the central nerve it has the upper wings near the edges waved or shaded; with a small pale oval spot and another of a kidney form, which last rests on the lead colored spot — the eyes are of a dark red brown. The one with expanded wings is supposed to be the female (being difficult to distinguish them) from its being larger & color not so distinct — they were found in company — body legs same color as the wings & flesh color the marking & shadings & spots are very indistinct particularly on the one supposed the female —

Sep 28. 1817.

---

138 This moth is very common generally found on the under side of boards & in board yards its color is brown approaching to a dove color particularly on the lower wings & the female — the head feelers eyes breast and legs are clove brown color

If Sirely, says this is the insect destroys the bees Theirs are found in numbers under boards and it is owing to this habit that they are found under the bee boards or boards on which the hives are set (examin how they lay their eggs &c)

the remedy is to tar the board —

aug
to Sep. 30

139. This Caterpillar has the 5 rings nearest the head covered with black hair and also the 3. nearest the vent the intermediate 4 are covered with brown hair the insect when in motion is about 2 inches in length. the hair or bristles are of a pretty uniform length and do not easily come off on handling it —

Sep. 25.

---

140 These caterpillars are found in broods on the low growing oaks and on the and are subject to be destroyed in the earlier stages by the Lyster Oaks. and when larger by the which deposits a number of. their small white eggs on its body. they are found Sep 26 1817. in all stages from 3/4 of an inch to 2 1/2 inches on the same bush or tree quercifolia at the same time probably the eggs are hatched at different times perhaps wisely so ordained to keep up the species & guard against Aug 20 the accidents of birds be some of them are of a browner stripes Sep. 8th 1818 and redder color but they are generally of a tawny orange color with black —— the feelers when full grown are about very common 1/2 inch long they have two rows of very minute short spines on the back and a row on each side of the body (black striped with yellow) when full grown they are rather more than 2 inches long and 1/3 diameter they then leave crawl down the tree and seeking some dark hole under stones &c in the ground they undergo their transformation into the pupa state without spinning a cocoon the skin of the larva splitting open on the back before and the pupa by repeated motions extricates itself the pupa is long with two spine at the tail the annulations very distinctly marked —— the larva is black 2 1/2 long with 8 orange yellow lines down the back & sides and one down the abdomen it has a yellow stripe between the false feet it has very minute short spine and has 2 short black horn on the middle annulation of the fore feet

141 This moth about an inch long is of a fawn color exterior edge of upper wings shaded with a cinnamon brown head and tuft on the back also of a cinnamon color body feelers & legs & under wings of a pale cinnamon color approaching to flesh color — upper wings near the root marked with three contiguous well defined spots. of a pure or dead white. and another cluster of irregular white spots placed about 2/3 along the wing and near its outer edge — a small white spot just over the eye at the root of the feelers.

---

142 This moth is near 1 1/4 inch in length is of a general color blueish grey color the nerves of the wings strongly raised & remarked it has two tufts on the back

143. This is a very small delicately shaded insect
the general color between a brown and a purple upper & lower
marked with 5 waves blue or purple edged with white diverging from the root of the wings
it has a very distinct white spot on the upper side
of the upper wing in a blotch of blue the body of the
insect is about 1/3 inch long and from the end of the wing to the other
about 1 inch —

144 This is a dark umber colored worm with a row of 8 minute silver specks
along each side, is covered with fox colored hair

145
Libellula

This is a beautiful one of the most beautiful of the Libellula genus the body is of a bright carmine or of the color of morocco leather. breadth edges of the wings, shaded or spotted with black. breast head feet. and nerves of the wings of a rich vandyke brown length of the insect 1¾ inch long wing hyaline or glassy. the lower pair with a broad or long basal blotch (extending from the base to the middle of the wing) upper pair slightly tinged with the same color. (toward the base) eyes very large colored a morello cherry nerves of the wing at the root of a morocco red color each wing near the end has an oblong square red spot

Oct 1

antennae
wing cases striated, with 3 longitudinal rows or irregular
of copper or brassy indented dots placed at irregular distances on each

Elytra striata
with 3 longitudinal
rows

147
Coccinella
Lady bird

Lady bird

148

Very small not more than 1/10 of an inch long.
Of a pale new soal leather brown red colour elytra longitudinally
furrowed

Sep. 15
Oct 5 } 1817.

149
Libellula

150
Libellula)

male.

It differs from 149 in having the wings near ½ of an inch longer in the form of the nervures of the lower wing next the body. which terminate next the body more abruptly and are not rounded off as in № 149. It differs also in the markings more distinctly also has an additional green stripe from the neck to the base of the upper wings on each side of the thorax making three broad stripes on each side of the thorax where the one above has but two, the eyes in this species are green in the other they are blue* on the sides of the body this has blue & green bands on the other this bands are all blue thorax & body of both a rich hair brown

These lively animals are seen sporting in the middle of the day in narrow alliance over the greater part of it alternately pursuing each other over the surface of the water. occasionally darting off like an arrow and as suddenly returning sometimes stationary with their wings in rapid motion then like lightning disappearing

* this is not so dark

151 This Insect which is of a general color vermillion ~~colour~~ red owing to the strong marked nerves in the outer wings and red streaks on the thorax ~~thaad~~ is of a gamboge yellow colour on the body and rather of a dirty yellow on the legs. eyes brown under wings are of an opaline or milky reddish glass colour marked with a few red fine veins ~~under~~ the body. near the end it has like the locust a sting in a sheath. Its motions are that of skipping—

Oct 5
1816.

152 This Spider ~~is~~ supposed to spin no web ~~—~~ the body is near an inch long. On the top of the thorax from the edge, and on the body at its connection with the thorax, and on the sides of the body it is marked with a pale reddish colour the legs too have a reddish tinge with rings or spots of a ~~bet~~ colour the eyes are eight in number viz 4 on the top of the head or front part of the thorax placed nearly in the form of a square ~~—~~ ~~an~~ 4 very minute ones disposed horizontally in a row over the jaws ~~—~~ the general colour is of a pale reddish tinge shaded with ~~brown~~ approaching to a black on each side of the thorax ~~—~~ with ~~two~~ triangular black spots on the body next the thorax and black under the thorax and belly ~~——~~ This spider is without hairs or spines

found in meadows

Oct 5
1816

153

Larva ♂

154

This Spider is hairy or spinous, with ~~brassy~~ bronzy green jaws
with six eyes 2 large & 4 small the two large
eyes being in front like diamonds set on on a band
placed over the forehead — the feelers are flat and
feathery the whole body legs &c covered with hairs
the top or back part of the body has a half
circular yellow or gold like color spot in the center of it with two smaller
~~dots~~ spots or short bands placed opposite each
butting on a longitudenal green spot
it is thought to spin no web

found on fences Oct 6 1817

155

The length from the tip of each of the upper wings when extended is about 1 3/4 inch in the male and about 1 1/8 of an inch in the female which is about 1/3 less than the male. the upper and lower wings are marked at their exterior edges with a row of black dots at the termination of the nerves. and an inner row of black dots or rather a fortification line — a black spot in each wing near the upper edge of each wing — and another row of fortification line near the root of the upper wings. body and wings white; breast legs & eyes of a blackish brown — the shanks of the middle pair of legs armed with a pair of spines. the hinder legs with two pair of spines. and hind and under of the belly hair on the back of the thorax marked with yellow. feathers of the antennae of the male yellow. or fawn colour body of male 1 inch long — female 3/4 of an inch

When these come or rise and flutter about the our farmers calculate on frost or frosty weather — these

156 Libellulae

This Species of Libellulae is somewhat larger than 145 the thorax and eyes are brown. head smaller than 145 the eyes verging to olive. the wings at the root slightly tinged with yellow. body of a red chalk colour. the spots of the wings also of red chalk colour. on each side of the body. shaded with black on each ring — body and general appearance of this insect slimmer than 145

157 This Grasshopper is about 1 inch in length wings of equal length to the body. — general colour is of an umber shaded with bister thorax is ridged. under wings next the body yellow passing in to bister color. toward the upper margin —

Oct 15
1817.

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158 This body of this Spider is about 1/3 inch long this two first pair of legs are about 3/4 of an inch long next 1 1/4 inch, next about 1 inch next 1 1/4 inch = it is of an ash or pale brown with a white belly —

159
supposed to
be same as
No 1.

160 This Caterpillar is of a rich chesnut close brown about
1 inch long with a narrow yellow stripe the whole
length on each side & it when touched curls
itself up.

Oct 18
1817.

161 This beautiful butterfly is about 1 1/4 inch from the tip of one wing to the other — the body is white with black dots placed regularly on the back. eyes black. antennae the same colour. the upper surface of the upper wings which are long & narrow are of a buff or yellow colour. with a irregularly formed semicircular white band on which bands are placed lengthened black dots, the under surface of the upper wing is of a red lake colour. passing into yellow or buff. on the upper outer edge. from the outer edge there are 4 black irregular interspersed with black dots bands that run nearly across the wings the outer edge has a regular row of dots; the upper and under surface of the lower wings are of a pale and bright lake colour. with a broad black band at the base with 2 black spots on the outer edge

Oct 12 1817.

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162 This Butterfly is about 2 inches from the tip of one wing to the other = its general colour is of a greenish yellow. with a broad black marginal band on the upper wing in which band on the upper part of the upper side there are three oval or rather ill formed yellow spots near the tip and two near the lower part of the wing. the upper surface of the lower wings on the outer edge is shaded with black which tapers off toward the base it has a deeper yellow spot (ocellus) the lower surface of both upper & lower wings are rusty yellow (with a row of 5 brown dots and a brown blaze near the outer edge of the lower wing) in the centre of the lower wings is a double black ocellus or two one larger than the other but both small. the under surface of the upper wings is of clearer yellow than the lower wings a black spot corresponds to the one on the upper surface and six dots near the outer edge it crosses over nets spots in the road in which they are often seen in great number. the eyes are yellowish green hair of the head brownish pink with a pink or red spot at the root of the lower wing

the figure is rather too large drawn by Prosperin

Oct 18 1817.

163 This tuy 3/4 of an inch long has a very pungent smell
resembling the quince in fragrance it is of a bladish
brown speckled -

Oct 22
1817.

164 Bee . . . one inch long . head, legs & under part
black — thorax & upper part of the body covered with
hair — thorax marked with a broad black band passing from the root
May 14 of one wing to the other — with a black band near the apex
1818. or end of the body. wings dark brown & glossy & shorter
than the body when at rest the wings fold over one another
the thighs thick & white tarsi
the legs are black — hind legs twice the length of the front
& much longer than the middle —— found on flowers ——
Oct 16 throughout the summer. — has a sting —
1817.

165 Beet.

Oct 20
1817

166 This is a small species of a brown red colour thorax
Coccinella black the exterior edge with an white oval spot in which
there is a black spot — head black with two white
spots between the eyes — belly & legs of a blackish
brown —

Oct 23.
1817

167

This Insect is about one inch in length ~~body~~ Elytra and truncated
~~a little~~ blackish ~~belly~~ abdomen longer than the elytra which
are longitudinally furrowed with 6 furrows in each
elytra ~~the thorax~~ thighs and shanks with
the first joints of the antennae are of a yellowish
red colour the joints of the feet are five in
number are of a brown colour and hairy 4 feelers
the 4 hinder shanks are hairy the termination
armed with a spine — the shank of the fore
legs has about half way a spur terminated
Oct 23 in a knob or head the neck of the insect is
1817. long and the head elongated with prominent
eyes antennae with 11 joints the last 10 of which
are black — body ferrugenous brown

168

This Centiped is about two inches in length and
about the thickness of the largest feather in an
hens wing towards the belly it is of a light
reddish brown and on the back of a dark brown

Oct 25th
1817

Caty did. This well known Insect is about 2 inches long and of a grass green colour, and whitish green on the belly. The wings are about 3 inches long, are red or reddish brown for half an inch, the upper part of the ayes which are very small is yellow. lower part green or blueish green the back of the head has a half circular spot of purple or lilac color (in some it is of a yellowish brown) with yellow streaks. these are the only parts where the general colour varies which is lighter or of a whitish green on the face chest & belly. of the insect the terminating of the body is singularly formed. the lower half of the way is transparent with nerves running vertically & horizontally giving it the appearance of venitian blinds. the general form of the wing case is oblong oval resembling a leafe or the husk of the ear of the sapaffras in Spring the nerves are strongly marked. the jaws are edged on the inside with black four palpi the upper lip pale yellow & on the back or upper part of the body it is marked with four broad reddish brown bands. The under pair of wings are lapped folded together lengthwise one half on the other lengthwise are very tender and apparently unfit for flight. it has a dark brown tuft on the back on the third ring from the root of the under wings. and a very minute spot on each side just under the after part of the saddle or brace which appears under the magnifier round and to operate as a valve (supposed to be the organ through which it respires breathes) examine further on this point and dilate amplify upon it. the venitian blinds are sometimes stained. The first hard frosts puts an end to their music after which they are seen and heard no more for the season — The wing cases shut together like the two shells of a muscle. described the transparent attached to the base of the wing when the season when they are numerous they make as great a noise as the locusts there latter however only make a noise during the sunny part of the day while the caty did is of a more pensive character and is heard only in cloudy weather or at the approach of night fall evening and during the night for 5 to 10 minutes it repeats without intermission in a loud shrill sharp note its supposed continued of Caty-did, did, did Caty did did did. In the silence of the night they may be heard at the distance of 100 yards — there is seldom more than one on a tree and so attached are they to their stand where once chosen that they have been know to be for 5 weeks to remain day nearly in the same place they move very deliberately. and unless driven away will rather vary their position with regard to the intruder than leave the limb on which they happen to be.

Aug 15
Aug 30
Sep. 6
1818

Sept 22 1818

Oct 6 slight frosts
Oct 12 noted to be seen

1819 numerous in noisy

Indeed — be said rather to leap than to fly. as they cannot move for at a time and the wings & wing cases appear to be used rather to break their fall

170

This little insect remarkable for its singular conformation
is very active when caught it instantly acts in the defensive
and turns itself in every manner to be able to use its pincers
or jaws if they may be so called as they are situated in
the extremity of the body !!! examin this insect under the
microscope & describe it very particularly — They are seen spinning
in numbers in the delightful haze of an "indian summers"
atmosphere — there are some not above 2/3 the size
of the one figured the former are probably the males
they are darker than the one figured — The very
cases which are of a grey colour.
cases about only about half of the abdomen — the
the body of a yellowish brown colour. legs pale yellowish brown

Oct 30
1817.-

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171. This is an active little insect the whole of a brown colour
and a high polish or gloss — the legs spiny —

Oct 26
1817.

171 This insect of the insect is of a bister colour
it is rough scabrous? dun coloured & hairy the back of the
thorax is of the form of an escutcheon with
a shute or spout projecting over the head — the
head is flat circular and terminates in front with
a horn or tip bending upwards. it is about 1/3 of
an inch in length the insect is thick set & heavy made

Oct 23
1817

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172 This insect is about 1/2 inch in length — thick set or heavy made
head furnished with a horn rising from the centre
of the top of the head — wing cases deeply &
longitudinally serrated & furrowed and broad large ridges
in the furrows it is
The insect is of a blackish brown —

Oct 23.
1817.

173 May 1. 1818

This Scarabaeus is about 3/4 (c 7/8) inch in length the shield of the head has a short abrupt terminating horn cut off as it were. the front part of the shield of the head slightly divided the shield of the thorax rises abrupt in front and is finely or minutely punctured the wing cases have the ridges of the ~~sutures finely~~ slightly polished and the shallow furrows ~~minutely~~ that sit with minute longish transverse indentations — the wings are very long and brown — ~~the fore~~ the thighs of the fore legs are red hairy or minutely spiny — black brown colour; found under stones. The specimen found May 1. 1818 was 7/10 long — —

174

This insect is about 1 3/4 inch or 2 inches in length. of a brownish black. the thorax highly arched and polished except in front where it is broadly & deeply indented where it is minutely wrinkled — the wing cases are irregularly & obliquely furrowed or marked like with digs of the graver. the whole under part of the insect is remarkably thick set with strong red hair — the fore and middle shanks each have three teeth. (the specimen from which the drawing was taken imperfect wants head and hind legs)

175 This is a very minutte species of Locust not much above 1/3 of an inch long — it is remarkable for two projections on its head like the ears of a rabbit the front view resembles the horned owl. its general colour is of an ash coloured brown white on the under part of thigh, face and body & abdomen and speckled with the ash brown colour the abdomen is white with reddish brown speckled — the termination is of a chesnut brown the nerves of the wings are strongly marked, with a raised part along the suture near the end of the wings —

Oct 20.
1817.

---

176 This insect is of a pale buff — the upper wings darker than the lower and speckled with a pale purplish brown and irregular formed streak or band on the upper wings parallel to their base. on the under part of the upper wings there is a small brown spot near the outter nerve of the wing and on the under side of the lower wing there is a brown spot in the center of the wing; the Antennae of the one fig. is narrow feathered (supposed the male).
Oct 5
1817. the body of the insect is of the same colour as the upper part of the upper wings — legs brown eyes rather small — small round brown spot on the upper surface of the upper wing — less than the head of the common pin —

177 This insect is of the colour of the our common wasp.
is rather longer than 1/4 of an inch the thorax is reddish and the
appendages brown eyes back body. and legs brown the top of the and
upper wings have a strong arched nerve on which
the outer nervé rests it has a large black spot or shade
with three broad but lighter shades running across the nerves.
breast and head reddish brown —

Schneumon

Nov 6
1817

178 This insect is of an oval form and convex back
hardly 1/10 of an inch in length of the colour of a grain of coffee
slightly affected by the fire — it is slightly furrowed & slightly punctured
thorax brown, elytra glossy & transparent,

Nov 6
1817

179

This insect is rather more than 1/8 of an inch long. brown colour. (coffee roasted) paler at the base & ends of the elytra which are cut square off and cover reach only half of the body the legs and under side are of a yellowish brown. or brownish yellow the joints of the antennae appear to have yellow hair the shanks toothed wings are long. they have a very stout brown arm or rib with 3 spines on the outer edge of the wing from which the outer nerve proceeds —

Nov
8
1817.
J.

180.

This little insect (apparently a scarabaeus) is about 1/6 of an inch in length it is a very strong insect for its size its whole colour legs &c are of a brown black very glossy the elytra slightly furrowed and with small blisters the antennae are large and black three fingered and the palpi 3 jointed and terminating in a club. they are found in dusty roads about the time of the indian summer or sporting in its delightful atmosphere — they are then numerous —

Nov.
8
1817.

181 This insect is of a lighter colour except the head body.
thighs shanks and tarsi hairy — it is dipterous
its balancers, are large & somewhat in the form of a club, turning upwards —
it has a dark spot at the termination of the second or nerv
of the wing — the nervures are dark and strongly marked —
the hinder thighs shanks and tarsi are much larger
than those of the other legs. —

Nov 8
1817.

182. This little insect is about the size of 180. viz 1/6 of an inch long
it differs from No 180 in the thorax and elytra being more of
a brown; and not so glossy.
the elytra are deeper furrowed the hinder side & belly.
& legs are of a reddish brownish yellow. — the wings are long —
the three fingered
its antennae are wanting — the thorax, shield of the head and elytra
are punctured — the shanks are three toothed and hairy —
shield curved in in front —

Nov 8
1817.

183 The first joint of the antennae are short clubs of irregular length
inserted one into the other and the last six are nearly heart
shaped — The general colour of this insect is raw
terra de Sienna, tinged with green, a few spines at the front of the head sides of the thorax
and on the edges of the elytra the shanks and tarsi are spiny & hairy
the tarsi of the fore feet are broad and flat and hairy — at the
root of the elytra there is a brown half moon spot on each wing case
forming together a rough brown spot at the base of the elytra
Staphylinus ? there are inverted horse shoes of a brown colour. — the elytra
only cover half of the body. (with brown waves above them) —
the eyes are large oblong and brown. head & thorax with
brown spots. breast of a glossy greenish yellow, thighs mixt the
body dark brown — the back has 4 spots of a brown colour each of which
terminates in two points towards the tail

Nov 9th
1817.

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18 * of a glossy shining velvety or plush appearance
rather more than 1/3 of an inch

184. This insect (ant?). is brown about 1/3 of an inch
in length the edges of the wings abdominally (coffee and milk colour)
~~or yellowish~~ or brownish yellow.

N

18 Oct 20.
1817.

185

Elater.

This Insect is of the colour of a [illegible] brown, or [illegible] yellow, with a few yellow hairs on the thorax and thorax, hairs on the wing cases. [illegible] inch long — found in digging in the garden [illegible] season — not quite $\frac{5}{10}$ long.

Novl.
1817.

185

This fly is from about 1/3 to ½ an inch in length is of the colour of a light or raw terre de sienna yellow. the body which is flat is covered thick with hair of the above colour. — the thighs hairy toward the shanks on the two posterior legs they have a few black curved spines, shanks have long black spines on each side of the tarsi they have very short black spines — the thighs shanks and tarsi are of a reddish brownish yellow — the balancers pale the eyes large and dark brown. the back of the thorax top and under part of the head black spines — the wings are nearly of the colour of the body, but a little longer than the body upper part partly obscured by the colour. with a black brown blur on the center of the nerve. — the wings lay one over one another flat when the insect is at rest — they keep pretty constantly in motion — with small black dots on the sides of the thorax —

Nov 6
1817.

186 This ~~Ichneumon~~ is of a glossy brown or cinnamon red.
~~yellowish brownish red~~
about 5/8 of an inch long the eyes are oval prominent
and dark brown antenniae ~~Above brown~~ the shorts
joints which precede the thighs are dark brown
wings are of a bister colour ~~—~~ brown about the indentations
of the divisions of the thorax or breast, and legs ~~—~~

1817.
Oct 30

18—

18[illegible] This ~~worm~~ is about 1 inch long when ~~at rest~~ ~~is~~
~~light~~ of a ~~fair~~ brown color with a fine yellow line on the back
and a flesh coloured line along ~~and~~ sides ~~the~~ with
~~hair~~ brown bands crossing each other ~~as if plaited~~ the anus is
the chief towards ~~the~~ vent

N

18

nov 20
1817.

188

The large blue fly. This insect, in some specimens is
no larger than about 3/4 of an inch generally is from 1/2 to 5/8 inch long. The eyes are of a
deep chocolate colour. antennae feathered, The thorax is
divided across in three divisions across. is bluish
or lead coloured. with short dark streaks running longitudinally
and having a few recurved blue spines. the body is of a metallic
glossy green to blue with a rich metallic lustre. and on the belly, & sides
fine ash greens. & has toward the apex a few black hairs
and spines. the rest of the body & the legs are blackish thighs &
shanks being unspinous. It is rather of dull heavy habits. beats brown
the wings are nearly double the length of the body & and light bronzy blackish brown & darker towards the base
and iridescent the nerves particularly the outer ones and towards the root
strongly marked.

Nov 20.

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189. supposed to be larva of the Libellulina Phryganea but not certain.
it is about 1 1/2 inch long of a pale dirty yellowish brown
towards the anus and of a pale liver colour towards the head
the thorax & head is brownish & speckled with blackish is about the head & thorax & is hairy
along the back it has a lines coloured streak which is broader or narrower
at the insect breathes. the feet are long thin and yellowish red.
head oval in front this singular insect forms a
raft or case of small pieces of drift wood bark composed of little small pieces
found Nov 28 1847. in dilettes of running waters
of bark, sticks & reeds which it cements together. this case, the weight of which
is so nicely proportioned to its own weight that by the
least effort of the animal it can either sink or rise in the
water or float to the surface at pleasure by bringing its body *
to one end or the other that end sinks and by the least effort
of its feet it swims towards the bottom or top. it may be
observed when the ice is not more than an inch thick floating immediately
under the surface of the water ice. it is a very strong little animal
and it requires considerable effort to pull it out of its case it has a hair and a false foot at each
end of the last ring and what is singular is that it lives either
inverted in the water or out of its case, which is open at both ends
how does it breathe when sunk for hours under water? and lies on land for hours
when entangled under water among roots and grass our waterman is seen
his ark along fastens its strong boat hooks in the weed occasionally
he suffer its to float carelessly along

* to enable it to do this it is furnish with about 50 hair like of a pale
which are placed in two rows on its back and two beneath between the false feet flesh color
each row crossing the other. the feet together in the joint the rings of the body

190

This insect is little more than 1/4 inch to 1/3 long very active
Head, ant like thorax reddish yellow elytra 1/3 length
(black)
of the body & very black. body & first annulation, reddish yellow
2 last black) & black brown legs reddish yellow knees brownish
antennae. feelers terminating in a club
the whole insect is very glossy — warpound among drift wood —
legs slim and reddish yellow. knees brownish

Dec 1.
1817

191

This insect which is about 1 inch long is of the colour of a grain
strong burnt coffee or of a violet brown, vandyke brown.
all over of one colour. (antennae ~~short~~ 11). growing larger toward
the end head flattish thorax four sided (slightly rounded at the upper
narrower than
the elytra at the base. the elytra or back is three times
the length of the thorax and rises towards the anus. and
when within one third of the length the elytra deflect suddenly
towards the anus — found dead on sawed timber —

Nov 25
1817.

the tarsi are 5 in number on the fore & middle feet but only
4 on the hinder the first 3 or 4 being very short, round, and the
being tufted at the end
last as long as the rest put together, with 2 claws on each foot
the eyes are flat and sunk in the head — the whole
insect is of a fine violet brown (lake & black) thorax thinly sets
slightly emarginate and the elytra have broad longitudinal rows minute punctu
scarcely visible without the aid of glass jaw is 3 toothed

Supposed Larva of Phryganea? This Insect at the same
form as 189 differs from it in being smaller & in the formation of its case
which resembles in form and mode of construction a minute
elongated basket with a small hole in the bottom is nicely contructed
of fine grass. at the bottom of which the insect attatches one or more
small pebbles of the size of duck shot and then displays that nice
193. balance of its case which is seen in that of 189. If by any
accident it looses the stone or balast the insect is seen
making powerful efforts to sink the case. which it does
by protruding nearly its whole length out of the case & by violent &
sudden jerking its body backwards it makes out to bring its
case again under water, when the ballast is on and it wishes to
descend it moves nearly out of its case up the side
Dec 5 of it, when either from being filled entirely with water or
1817. some other cause it loses its descend — it is then seen roundly
its basket or tub like Diogenes. along at the bottom of the water
found in running shallows probably in search of food.
water among
grass.
moves on
the bottom

192 (Buprestes?) This insect is about 3/16 of an inch long, & about 1/4 broad.
This insect is of a bright golden green is a very elegant insect
it is marked with a broad curved or bent band (or golden yellow)
and a small irregular triangular spot near the end of the wing cases
which truncated & terminate in points at each side of
about the base of the band; which are very distinctly marked it is
shaded with black which heightens it brilliancy —

194
Cuculio.

Nov. 10
1817.

195 This (Crawfish) is about 2 or 2½ inches long
of an olive brown color, ends of the tips of the jaws of an ochre
or iron red color the ends of the feelers of a pale red
it has 6 feelers 4 of equal length about ⅓ inch long.
the outer are larger and nearly as long as the body, or trunk
the eyes are prominent —— It is found in small runs
generally under stones and is not very numerous
when touched it immediately erects it self for defence
and attempts with its claws or jaws with which it can
pinch very hard —— draws up its tail under its body.
Dec 12 by the sudden throwing it out it can move very swiftly
or accelerate its motions —— These insects are used by
the people in Luzerne & back woods to extract the poison of the rattle snake
they are bruised and laid on the wound as a poultice they
extract the poison & soon become foetid when they are replaced
by fresh ones — Brietzman Hoyt & others informants.

196 Pupa of.

It would appear that these insects are in the pupa state and change to the perfect state in the early part of the winter and remain under the bark of the white pine saw logs until spring — I found Dec 8 two of these insects in the pupa state each in seperate apartments a few inches from each other — one of them died in consequence of removal the other changed the 12th of the same month into the perfect insect — immediately under the brown or outer bark the worm or grub form a stripe of sleeves of the inner tough bark a case or apartment in which it undergoes free from intrusion of other insects its transformation into the pupa state —

Dec 8

198

found in the inside of a dead log of wood — probably remain above during the winter as I have found them in the summer five months before this time — it is of a dark brown color. with ~~two~~ a chit shaped ridge on each elytra. the body hangs down behind the breast and under part of the thorax is covered thick with long reddish hairs — the joints of the feet are 5 on each terminates with two claws: each of which has a smaller claw on the claw joints of the ~~tarsi~~ hairy or spiny. the forelegs are ~~toothed~~ with a spine, the other feet have spines at the termination of the legs and in the middle of the legs — the eyes are large — The larvae of the Melolontha are thick white round yellowish worm with a reddish yellow head —

Dec 8 1817.

April 25 1818 the bug in numbers under stones & a few of the larvae — the bug were of a ~~pale~~ light color. then when they fly about

199

Hemerobius. This insect is of a ~~black~~ yellowish clove brown bister color. wings brown with a shade of ash color. nerves strongly marked. the horns not quite so long as the wings which are more than twice the length of the insect ~~the lower~~ the lower part of the under wing ~~fold~~ up ~~underneath~~ from of the tail very short & truncated length of insect ~~⅔~~ inch. and of the length including wings one inch

March 14 1818

numerous on this day

warm pleasant frost out of the ground.

in great numbers on the frost comes out of the ground

200

Hemerobius. This insect is of a dark bister color.
wings resembling 199. upper wings have more coss nerves
than 201. in which it resembles in size & other respects —
length of insect ½ inch } horns of the tail very short
including wings ¾ inch }

March 14
1818

[illegible]
this day
warm pleasant
moist weather

201.
No 1
March 14
1818

Hemerobius. supposed the same as 199 —
length of insect ½ inch — horns of the tail very short - & truncated —

nerves on
on this day
frost out
of the ground
warm —

No 2
found
March 14

There is a smaller species about ½ the size of the above
or less the nerves somewhat difficult to marked but the color
of the insect & wings nearly the same. the male apterous or only rudimental wings
and about 2/3d the size of the female male with 2 long horns behind at the end of body

No 3
March 14

There is a still smaller species not more than 1/10th an inch long body
longer than wings. with two horns behind nearly as long as the antennae

these 3 species
will exhibit
in all the stages

all the above three species are of nearly the same color. of the wings the body &
legs of a dark clove brown —

March 14. 1818
warm pleasant weather thaws & moist. weak
appear immediately on the breaking up of winter & soon coming out of the ground in great numbers

supposed Hemerobius — the upper wings are short ears like those of some species of Grasshopper the thighs & legs are strong broad & flat — under wings long & narrow strong marked color of insect bister — dark clove brown. horns longer than lower wings length of insect about ¾ inch —

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203. This species of wasp. is about the size of the common wasp body brownish black eyes brown with a yellow band on the nape of the neck. & two yellow bands below the root of the wings the thighs of the are half yellowish red & part black. the hind thighs are all black. hind legs. in the thickest part are black joints of the feet yellow. wings reddish towards the end of a dark purple. the body at the end of a very long black rod. whole length of the insect one inch.

solitary wasp

This solitary animal. is of very retired habits it usually forms its nest in some dark place in out houses over which it spins a case a tough receptacle for the eggs examin this generally for 2 to 6 of these in one of them. It is attentive to think that for the construction of its nest this mason describe fully & interesting some of these nests will weigh 100 times itself — the larvae are inclosed in transparent brown cases with gold heater skin with somethin light filmy or silky threads around them —

This wasp after depositing its egg in the cell with 20 or 30 small spiders — —

To destroy cockroaches

Take common red wafers & strew them along the closet or rooms frequented by these vermin & it will destroy every one that eats it. Scraps or cuttings can be obtained cheap of the manufacturers for this purpose. It is probably the vermillion or mercury that effects this.

Canker Worm

Columb Mag. March 1788

method of preventing the destruction of apple trees by Canker Worms

"The insects from which the canker worms are produced are hid in the ground near the root of the tree, not far from the trunk and make their appearance so soon as the snow is off, and the top of the ground soft (which sometimes happens as early as February.) The males have wings, and frequently fly directly to the limbs, without touching the body of the tree; fortunately the females have none, but are a very clumsy bug, and very easily stopped by tarring the tree. To do this with success, it is very necessary that the tar made use of be of a proper consistence; if it be very thick it will be impossible to lay it on without first heating it, which makes it form a hard crust when cold that suffers the bug to pass over without difficulty; some endeavor to remedy this inconvenience by mixing train oil with the tar, but the thin kind of tar without train oil is far preferable if this be exposed to the sun through the day it will be sufficiently soft to be laid on with a brush. It is best the rough bark should be scraped off with a hoe or some other convenient instrument and the tar put round the tree about four inches wide. This operation must be repeated every day when the state of the ground will permit them to move, until they have done going up. It is not common that the weather is such as to permit them to stir until the middle and often not until the latter end of March; when that is the case, and the weather continues warm they will be all out of the ground in about 14 days; but as they are commonly interrupted with snow or cold, it will generally be necessary to tar as many as twenty, times, and some seasons, more times often. The time that is generally chosen to begin is about two hours before sunset (which is the time the insects begin to move) and if not finished until an hour after the sun is down (after the first time) it is immaterial for the tar that is already on the tree softened by the warmth of the sun will be sufficient to stop them until that time. I am sensible there have been several objections to this method of tarring, viz: that it is attended with trouble and expense; that it injures the tree and after all that it is ineffectual. As to the expense, a barrel of tar is sufficient for an orchard that will make an hundred barrels of cyder; and four persons in two hours will be able to tar the whole at once; allowing this to be repeated twenty times; the expense cannot be great and experience has sufficiently proved that it does not injure the tree — I know of several orchards that have been tarred (as often as the worms visited them) for twenty years, and could never perceive any injury done them; on the contrary, I know of some others in the same neighbourhood, that have not been tarred entirely destroyed by the worms. If the tree be thrifty, it will be necessary sometimes in the summer following, to scrape off the tar, or make a few incisions through it, to prevent the bark from being confined — that it has ever proved ineffectual I believe no one can produce an instance, where proper steps have been taken; but where it has failed, it has been owing to improper management, or want of perseverance."

The males are said to drag the female up the tree — In what manner do they injure the tree!? what number of eggs do they lay!? do they appear anually? in distinct? in great numbers?

Would not binding a strip of sheep's the hairy side out round the tree answer every purpose & be much cheaper — J.C.

Canker worm

Common Bee

206

See the article in the Columbian Magazine for Jan 1787.

Bradburys Travels in America

April 6 walked all day and in the afternoon met the hunter who had found a bee tree so named from its hollow trunk containing a swarm of bees and were returning to the boat for a bucket & a hatchet to cut it down. I accompanied them to the tree it contained a great number of combs, and about three gallons of honey. The honey bees have been introduced into this continent from Europe, but at what time I have not been able to ascertain. Since they have entered upon the fine countries of the Illinois and Upper Louisiana their progress westward has been suprisingly rapid. It is generally known in Upper Louisiana that bees have not been found westward of the Mississippi prior to the year 1797. They are now found as high up the Missouri as the Mahas nation, having moved westward to the distance of six hundred miles in fourteen years. Their extraordinary progress in these parts is probably owing to a portion of the country being prairie, and yielding therefore a succession of flowers during the whole summer. which is not the case in forests. Bees has spread over this continent in a degree and with a celerity so nearly corresponding with that of the Anglo-Americans, that it has given rise to a belief, both among the Indians & the whites, that bees are their precursors, and that to whatever part they go the white people will follow. I am of opinion they are right, as I think it impossible to stop the progress of the one as of the other —

Apis Mellifica.

white or wild honey — from what plant or plants the wild flowers & blossoms; or buckwheat? is it made? it aromatic flavor. notice it —

The insects or worm which destroy them (mothes & parasites or guards against) what are they? their history — the Bee eater (Latin name) great destroyer —

The common bee is about 6/10 of an inch long (of a terra Sienna Brown or bister brown; long shaggy hairy all round the thorax thighs legs cheek & face feelers dark brown approaches to black the reverse of the wing thorax marked: particularly the outer ribs — under pale yellowish red — hairs about the segments towards the apex short.

207 This is a very active insect and found also on the body of the Locust or Acadia in the trunk of which it supposed to bore holes & deposit its eggs to the great injury of these trees they are however not very numerous — its short twitching movements are accompanied a chirping noise (which it is supposed to be made by rubbing its antennae against its thorax or shield?

208 Found in and about fences and holes about roots envelope composed of dun colored hairs scarcely connected by any silk —

Hemerobius?

209

Lead fly?

April 3.

This insect appears in great numbers in the early part of April & are found on timber boards &c (~~flying about~~ flutter in about the middle of the day) along the banks of rivers into which the fish and afford a great treat to the fisher. coming about the time or rather preceding the arrival of Shad [illegible] they are called shadflies — There appear to be a variety of species of them — the larvae resemble the winged insect except that the larvae have tail horns. and that their wings or rudiments are not suitable for flying. This species is remarkable for having a dark lunule or spot on the back of the wings when folded — and is marked with yellowish and a lighter shade above & below it red about the abdominal rings — This species is ~~about~~ from 6/10 to 7/10 in length and comes and inclines the upper wings overlay to the right in others to the left — they are a harmless insect of the house (though unpleasant when they crawl over the face)

210

This insect, wasp?, is about ½ inch long. legs of a light citron yellow. eyes brown wings very pale brown. thighs of the 4 hinder legs at their insertion dark brown thorax & back of the body brown black with bright yellow bands passing from the neck to the base of the wing which base is also yellow. two yellow lunules at the base of the thorax there are four broad black bands on the back of the body. the lower edges of which are waved or indented — the upper band is much the broadest.

211 This insect is scarcely 4/10 of an inch long is of a dark brown color with the thorax high rounded & projecting with the head placed underneath the thorax —— probably belongs to the same ~~Lep~~ or as the small insect of half its size & same form found under the bark of the white pine in such numbers supposed to make the round holes of the thickness of a large knitting pin —

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212 This Elater is ~~5/10~~ 5 2/4 16 of an inch long of a brown color (under the glass with longitudinal rows of minute dots or dots and a few short dun colored hairs all over the Elytra. —— hardly perceptible by the naked eye — elytra furrowed the thorax is broader than at the broadest part of the shells —

May 13. 1818 found 2 specimen just under the surface of the ground.

213 cincticola

This insect is about one half inch long. brown eyes ash brownish green on the head thorax & elytra with 12 small spots on the shells the legs are of a brassy green - underpart of the thorax & ~~body~~ belly is of a brilliant steel purple or blue - It is found in pathways - & roads in the dust or sand

214

This insect is about 3/10 of an inch long the elytra or back of the insect compressed ~~or~~ flat the longitudinal furrough are scarcly perceived by the naked eye the whole insect is polished —

215 ~~Caterpillars~~ (Larvae of) This larva is found in sandy
old moved
or rotten stumps is from one inch to one inch & 1/10 long of a
reddish yellow the base of each annulation of a paler color head and
thorax of a darker tint jaws brown the last ~~segment~~ has ~~three~~ four knob
like protuberances on each side is divided at the end and each division armed with
two hooks = ~~at the sides of each segment there~~ is a straw colored band.
dark reddish yellow
it has eight small lengthwise spots on each side where it is paler
April 7. 1818 than on the back the feet which are six are transparent & resemble
amber and have each one claw or hook there is a tentacle like protuberance under
the last segment, tender part of the larva paler. a few hairs of the
color of the insect project on each segment at the sides three or four loose
(whole larva very glossy or polished)

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216 Vespa ? This insect is ~~about~~ 4/10 of an inch long
of a sooty black with transparent highly iridescent
wings front of the head chucks Thorax body covered with long whitish mealy
grey hairs antennae black legs yellow or having
a long spot in each upper wing on the upper or outer rib —
April 7 1818

217 Notonecta or Boat Fly. This specis is 3/10 of an inch long with cases of a hair brown color. eyes brown thighs legs & head of the color of gum arabic. wings transparent & purple describe its singular habits at the bottom of sweet water sucking the mud with its long sucker.

---

218 Staphylinus found in the cellar among decayed cabbage
call it Staphylinus Luciifugus or elongatus is about 5 or 6/10 of an inch long
elytra reddish brown light same color as spots of Nicrophorus grandis
body burnt coffee brown, head & thorax jet black antennae (11 joints)
brown legs brown and spinous this differs from the rest of
April 8 the Staphylini who are generally rovers in the sunny places —
1818 but perhaps it was brought in the cellar in the larva state?
it is, as the whole genus is, a very nimble active little creature, sprightly
very much & quick in its movements accompanied by a twisting of the antenna & quick
Staphylinus motion of the head —— it is voracious attacks flies spiders confined in a tumbler
J. Donovan or other insects confined with it — it is curious to see the
spider & it meet. they first (like the spanish matadors in the Ring) eye one another more towards each other
the spider more warily. when they suddenly rush together in
fierce encounter the spider however pays for his temerity
and yields to his opponent cased in mail on whom he can
make no impression generally after the first attack the nimble
spider seeks his safety in flight ——
the whole of the insect is extremely glossy or polished particularly
the head thorax & elytra ——

219 This species is about 3/10 of an inch in length the wings flat & broad
-the tail horns, are ~~3~~ twice the length of the feelers (see No 201)
it is of a light ash color & flat veins few & slightly marked

~~April 1~~
1818.
March 14

220 This specie is of the size of above but much darker color
the feelers nearly double the length of the former specie - the nerves
April 1818 are numerous very strongly marked and shaded about them
the shape of the wings different and rounded ~~on the~~ over the back

rare -
not common.

221 This minute species of Phryganea? is not above 1 1/2/10 of an inch &
is is not so numerous (as (201 "No 1 & 2)

April
1818
March 14
1818

222 This Grasshopper is 8/10ths of an inch long. bright ohamp ridged thorax
with just the rudiments of wings or ailettes - head wings thorax
& thighs greenish; with lilac legs. feelers eyes. and the upper
and under part of the segments lilac colored.

A. April 11.
1818.

very
a lit-
Stark

1.

223 This Grasshopper is rather more than 8/10 of an inch long
antlettes covers half the length of the body. the thorax elevated.
raised. whole insect of a pale yellow flesh color. wings rather
yellower ~~sparingly~~ spotted with purplish brown. Inside of the thigh near the body
April 11 of with a large black spot of ~~black~~. short formed for its thickness
1818

224 This ~~is~~ is near $\frac{2\frac{1}{2}}{10}$ of an inch long color of a black dark burnt
coffee grain antennae about 11 joints thicker in the middle or towards the end
thighs thick legs & feet thin — slopy: —

April 11
1818

225 This minute staphylinus is scarcely 2/10 of an inch long. whole insect of a blackish brown. ~~an~~ antennae ~~thick~~ club formed towards the end; caught flying — glossy — turns up the tail when first caught

April 11
1818

226 This minute Dyticus ... is rounded on the back. thighs rather dentiform Testa sienna color. found on mud adjoining water — head bent under thorax — loses the greenish tint of shell & throws when the insect is dead ——

April 11
1818

of an olive green (brown) back furrowed & under the glass the ridges are marked with (many) lines across the ridges — legs of a pale reddish yellow or

under part (brown) black edges of the thorax head & wing cases green

thighs (broad) brownish (at the thick part) next insertion

Apr. 6

very common Staphylinus

L. D.

227

This Animal is $\frac{2}{10}$ of an inch long of a reddish brown color
the outer edge of the transparent part of the wing with a yellow
April 11 black and waved with brown the sides of the under part of
1818 the body are red — black brown on the belly and breast —

very numerous

229

This fly. is 4/10 to 4½/10 in length is of a brown color.
with two silver white bands on the body scales large &
whitish thorax rais terra sienna brown eyes reddish brown upper part
of the head terra sienna color. lowers and fore part of a silver
April 11 or pearly shining plush in the living specimen. tow and the sides
1818 of the thorax body & towards the apex covered with long
spiny hairs — a brown dot placed between the eyes
under part and belly. black also legs —

(The female is like the male. found in coitu
hairs cross each other from each side of the fore part of the head —

April 30 It is found in the woods — but more particularly about
banks and frequents on the mountain pink and other early wild flowers
It is found in the woods but frequents sunny banks
& is found on the mountain pink & other early wild flowers
(head of this specis very large)

230

This Spider. is of a pale flesh or chocolate color.
eyes · ∴ · it has two double 4 dark chocolate colored and a light band
from the end anus to the juncture of the thorax the legs are
annulated with biter brown ——— thighs gum arabic color.

April 11
1818
in the house

a & b supposed male and female — b the markings are different
it has not the 4 indentation on the upper part of the back
it is more speckled with brown dot towards the anus ———
its web or shet is small taking the advantage of some corner
a is the position it assumes when startled ———

231 Silpha americana, found in number about a
putrid cat male or female has broad pink margin on the thorax
the other is black or dull black both sexes are alike over. a dull
April 11 black very flat shield like thorax, with a slight rounding over the neck
1818 with flat elytra or raised in flet ridges shells very broad margin.
It flies in circles emitting an unpleasant cadaverous
smell. and is easily taken when it lights settles
pretty common
European writers describe this insect "with yellow thorax and
black in the center"; probably from dead specimens where
the pink changes to yellow.). (the full dead black of the insect changes to
light brown in cabinet a after death)
3½ to 6/10 of an inch in length. and 3 to 3½/10 broad across the
elytra
They are subject to ticks one of which is represented on the
magnified specimen. 2
specimen 2 this kind change to a light brown the other retains its
black color. but both kinds shrink in drying nearly 1/3
insect black & depressed shell roughened
In the living specimens though the color is of a bright pink when
for a few days after they appear. yet after a day[illegible] sometime
it turns of a reddish or orange tinge & the shells of a brown color
b Cabinet or dead specimen, living frequently are of this color

232 length of the insect hardly 5/10, of an inch head feeler legs body wings
two yellow bands on the thorax inner part of each red or lake
under part of the thorax and neck pale lake or pink color
April 12 smell of rhubarb or medicine
1818

233 This fly is found on the window panes in Luzerne
is 11/10 of an inch long is slender built & long thighs &
legs short hairy of a reddish brown color on the body eyes & legs
wings brown nerves very distinct (with dark brown lines
on the thorax) the wings in the magnified specimen
April 12 not drawn long enough
1818

234 This Scarabaeus is from 6 to 7/10 of an
inch long — are found on horse dung & excrement of man & beast
they vary very much in color some being of a brassy green
playing into to coppery — others purple black — and some brown
April 14 black — they are generally found in numbers — their strength
1818 is astonishing! anything on the subject of their strength — they
are much infested like most of this genus with the small tick (latin name
of tick)
they are round and high raised backed (1 to 1½ inch) steel blue or green
on the body thighs & legs covered with long hairs on the legs &
tarsi. — with a small indentation on each side of the lower
part of the thorax — which thorax is very convex —

235 This spider (house) is somewhat less than 230 (say 2/10 orthest
body & thorax has but a small tuft on some other
is darker and more black about it than 230 —
April 14 1818. the difference between male & female is very trifling the one
being rather greyer than the other a slight tinge of red or fleet
colour.

236 These maggots supposed larvae of the were
found in great numbers in a decayed cat their length is
6/10 of an inch long but they can draw themselves up to 3/4 that length
they are extremely active and quick twisting & writhing in
April 14 1818 motions — they are of a pale whitish colour & the viscera?
is plainly distinguished in motion the after part of the body is
truncated & terminates in several tubercles spines —
two reddish brown spots are distinguishable where it is truncate —

237 very minute Staphylinus with bronze elytra / elytra of the color of a copper slightly rubbed over with quicksilver — or
1½/10 to 2/10 long. shin busily little animal active found under
stones — of a dark bister brown color — ~~thorax~~ f
April 14 flat on the back & elytra rounded on the belly —
1818

very numerous
May 26 1818
on fences.

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238 minute scolopendra? or Julus? light amber colour. ½ or 2/10
an inch long not ~~thicker~~ than a very fine needle — and
found under stones & timber & in damp moist places
Glossy like gum arabic? ——
antennae like a necklace of flat beads
April 14
1818

239 This is not so active a staphylinus as the generality of the species they were in numbers under a putrid cat. they are about 1/10 of an inch long rather clumsy built dark piceous brite all over. elytra in the living specimen about 1/4 the length of the body legs & feelers rather short thorax formed.
April 15 1818 they are rather tender & do not admit of much handling & they then soon die ——— They have a remarkable bend in their form the back at the end of the elytra being bent in and the end of the body bent up ——— the head also and thorax is bent down * antennae eleven with fein like a antennae ——— their form when not in motion resembling letter S somewhat resembles the letter S. not or a hook in this however. they are broken backed similar to otho spin many of which have more or less of this form delumbis C.

May 25 18/18 in numbers on putrid. on trail of that in coitu — *She two sexes differ only in the one being 2 1/10 the other sex not above 2/10 number being in coitu this day.

---

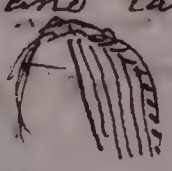
240 This Julus? is found under stones in damp situations and is of a reddish purplish brite color ——— is composed of 19. articulate corslet 1 head 1 in all 21. — has 5 antennae the last one has a small one at its end ——— it is not so active as
April 16 1818. the rest of the genus. ——— They are generally from 7 to 8 9/10 of an inch in length ——— not so glossy as the generality of the genus ———
soon die in a dry situation ——— in the light ———

241

This Scolopendra
very bylosy legs transparent body from 3/4 of an inch to above
an inch in length — found under stones in damp situations
antennae composed of about 40 beads or joints larys at their
insertion & decreasing rapidly to the end last joint somewhat
April 16 longish. very active insect & numerous — should be highly
1818. varnished ——— feet increase in thickness & length from
the head to the end of the body —— the two last pair being
longer than the rest & the last pair much the longest nearly
3 times the length of the pair near the head ———
body covered with a succession of sheets placed one after
the other jaws pround & from the sides of the thorax & meeting
together under the lip —— feet 1/3 length of the body ——
do not live long in a dry situation exposed to the
light (15 legs on each side)

242

3/10 long, black, plays into green, six feelers, shield like thorax, 2 slim long feelers,
shells furrowed —— same genus as. 146.
all the legs brown — but and terminating in a knob
April 16 found under stones — under side dark bister color
1818. (thin legs (spiny) and tarsi — with short cuts on the outer
margin of the shells



antennae 11 —

243 body composed of 13 annulations smooth — six feet and two shorter
feelers — general color of the larva a pale reddish yellow
with darker circular bands of the same color — head & jaws brown
April 16 the end turns up & is armed with two claws. under
1818. which end are two small supports or teats —
found in closet of back parlour —

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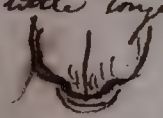
244 larva of ——— found under a stick of timber on
the ground. — six feet. jaws head & thorax of a reddish brown
April 16 body of 11 annulations with oblong rather oval spots on
1818 the back of each annulation and a few brown hairs on the side of each
yellowish red on the posterior & last broken on the anterior annulations
9/10 of an inch long

larger species of this Genus are very common but this which
is scarcely 4/10ths an inch in length is rare wings pale brownish
body with a broad dorsal muddy-yellow band
April 17 1818 underwings shorter than the upper found on timber

4/10ths an inch long found very common under stones
dark brown color thighs legs and antennae light yellowish red
thorax with marginated indentures (two sizes of them or species resembly each
April 17 1818 other in all respects except the margin of the thorax which in the
small species is yellowish red
shells of both species furrowed thorax nearly square formed of
both larger species 7/10 of an inch long both somewhat lengthened form
both found under stones
in these species the thorax is margined the shells very little
of it's ads the body in both is a little longer than the shells
which shells are then formed at the apex 
the shanks and tarsi of the small species are more spiny than those of
the larger species, both found under stones active when the light
the larger species is already figured male & female (No 7.) in the
drawing the legs are not reddish yellow enough and the shells scarcely
long enough & hardly brown enough

247 this is somewhat or a little shorter than
the preceding species but broader and the head smaller. it is also
over of a dark ~~brown~~ light black or piteky black with a greenish tinge
April 16 1878 in some specimens in others of a coppery tinge elytra finely slightly
furrowed — very active insect and like the ~~other~~ preceding species shuns the
light & upon turning up the stones ~~&c~~ escapes with great ~~spe~~ exitity into
some hole or under stones or rubbish —— the elytra are
margined the thorax not —
form somewhat ovate —— antennae thin —
this I believe belongs to the same genus as 242 & 146.
the fore and middle shanks have a number of spines. the hind shanks
three spines inside of the shanks short hairs —

---

248 This minute species I suppose to belong to the same genus as
246. is of a flavish brown or pale reddish brown on the thorax but of a
darker tint or brown on the ~~shells~~ furrowed shells & thorax emarginate
~~reddish~~ glossy chestnut brown
eyes large feelers yellow three first joints of antennae pale
April 16 1878 yellowish reddish rest of the joints clove brown (antennae 12 joints?)

249

between 3 44/100 of an inch long, wings longer than the body — three spines on the outer edges of the shanks. legs very long. thin body of five segments without including wais marked with 4 brown bands, the segments next the waist yellowish green, the three last pale cerulean greenish blue, waist green, (thorax unknown, being defaced) wings transparent April 18 1818 & iridescent, with clear distinct nerves. with curved clouds in the middle of the wings and towards the end — eyes chestnut brown with a greenish play. — face, a narrow metallic green band between the eyes body of a metallic bottle. with a golden & crimson glance. all the upper part of the two upper brown bands. 2d band, or the band at the bottom of the second segment very broad —— in Sintons room ——

250

Oniscus near 4/100 of an inch long half as broad — color rounded on the back pale burnt umber. speckled with purple brown darker speckled towards the tail belly & legs nearly white & transparent, with a very pale lilaceous or violet tinge on amethyst tint joints root of the feelers darker violet tinge —— (from the stone coal or wood house)

April 18.
1818

251 Blatta, Pennsylvania?

April 19 1818 very cold windy day

5/10 of an inch long, 2/10 broad, found under stones in numbers very common
darker towards the tail
of a reddish brown Antennæ nearly as long as the body.
very active shun the light, stinky upon exposure.

252 Grimex. 6/10 of an inch long. slightly resinous or tarry
black or brown black-dull or
belly & back ochre red in some specimens approaching to vermillion red.
fresh
long formed — found under stones 2 specimens under different
stones — This is figured too large the legs should
April 18 1818 be spread apart the head is too large the figure greatly
& too dry
to much magnified & the rest of the natural size too small large
How it should not be varnished or very slightly so
figure this again. Slow dull in their motions —
the fore and middle shanks are furnished with a cushion
or hand. at the thick end of the shank (the belly red
brown towards the vent) they discharge an unpleasant smell
when they
when they rear it is accompanied by a clicking
click click click noise, or clattering noise

253 Melolontha? near 4/10 of an inch long found under stones — lighter colored is the fresh specimen very round thick bodied remarkably so. color of ~~body~~ partially burnt terra sienna — fore legs 2 large teeth — legs spiny — slightly furrowed and dotted or roughened —

April 19 1818

This insect is found in the Spring under stones in a ~~oval~~ cavity in the earth immediately under stone

April 30 1818. This species is uncommonly round & thick — The drawing is from a specimen recently from the larva State as they generally are much darker ~~brown~~ or of a chesnut brown —

---

254 all that below were found under stones

Carabi a $\frac{3}{10}$ long, broad for the length; greenish black see 242

April 20 1818

b nearly $\frac{5}{10}$ of an inch rather ~~long form~~ narrow form; but thick; color of molasses all over uniform color; glossy. jaws stong

5/10. elytra deeply furrowed of a pitchy black —

c $\frac{4}{10}$ of an inch long, thorax & head black brown, under part black brown legs dark amber colored ~~brown~~ outer last joints of the antennae black brown tips of the & elytra brown, amber color lighter towards the upper part. active, & glossy.

bronzed carabus ♂ $\frac{6\frac{1}{2}}{10}$ long thorax narrow, under at top or heart shaped & truncated, elytra head & thorax green black, lower part of the thorax, & outer edges & lower part of the elytra covered with fine gold dust or bronzed, thighs shanks & ~~those~~ first joints of the antennae yellow amber colored, tarsi & last of the knees & antennae & jaws brown amber color, elytra deeper furrowed than d. very active — about the length of d. rather longer slimmer built, but thorax & head not much more than half the width of d. powdered also on the elytra with fine copper gol

255 found under stones
Carabi. e 3½/10 narrower than a dark molasses of a molasses color thighs legs & antennæ somewhat dighter; or dark amber brown very glossy deeply furrowed

April 18 1818.

d scarcely 6/10 of an inch long. head & thorax broader than f of a brilliant yellowish grass green. of a metallic splendor: legs & thighs amber colored tarsi antennæ jaws & feelers brown amber colored. very active under part black brown. lower part of the thorax & outer margin of the wing cases with short hairs resembling fine copper or gold dust. - somewhat flattish

g 2/10 long color intermediate between b & c.. form same as those two —

256 2/10 long found under stones — brown shelly thorax punctures —

April 20 1818

under

257 Carabus dark violet light colored amethystine tint on the
margin transparent purple edge with lines of fine punctures and
three rows or interrupted bands margin of thorax & shelly
broad, & finely punctured underpart & leg brown black ——
April 21 1818 7 to 7/10 of an inch long. — slim built but broad
across the lower part of the shells — found under a
fence rail —— feeds on catterpillars, worms,

258 Staphylinus rather longer than 7/10 neck thorax & 4 first annulations
yellowish red — last annulation & head black —
last annulation extended with two tails and hairy —
April 21 1818 antennae middle part blackish brown — beginning & end yellowish
brown knees dark legs same as the thorax — hairy on the
sides of the elytra & body (& thorax) —— found under boards on the ground
very numerous under stones & rails &c —
they herd together gregarious ——

959 Staphylinus — rather more than $\frac{1}{10}$ long — elytra gilt or resembl.
somewhat dutch metal head nearly square. Head, thorax
& 4 first annulations of a yellowish brown two last segments
black, the last very small or short & hairy terminates —
legs very pale antennæ somewhat like a flat necklace —
April 21 1818 eyes black found under board on the ground

260 Staphylinus 2½ mm long very long & flat
April 21 1818 uniform width —
insect of a dark brown. elytra paler brown and
punctured — body clean or free from bristles or hairs
found under boards on the ground

261

Staphylinus 2 1/2 / 1a

April 21 1818.

head inflated or bent under thorax bent down — color bister brown elytra of the same tint but lighter somewhat roughened — thorax & head black brown; thorax burnished, legs reddish brown. Abanter spiny. lateral hairs on the body & end of anus hairs along the ~~brown~~ under sides of the thorax & head — antennae long; 11 joints first joint color of the legs the others black brown. the last joint the largest —

in flexus C.

262 Red Scolopendra can extend it self to 2 inches in length found under stones thought to be poisonous as it has the effect to stupefy & kill in a short time small insects enclosed with it in a vial whether poisonous — of a dark lake color ~~red~~ the viscera bowels are composed of a pale rose ~~red~~ calcareous & jelly or bladder. with liver colored mass in the middle or sides of it — not thicker than a common knitting needle

April 21 1818.

263 Carabus. 3½ long thorax & head highly polished & green outer
edges of the elytra & with a broad band of green
rest of the elytra violet red passes into rich brown legs tender
April 18 purplish the whole under highly polished or burnished ——
1878

264 Julus 3/4 of an inch long male & female resemble one another
found in coitu — the last of a flesh color, the shields verucose
or covered with pimples with a brown interrupted line along the
April 21 back — found under stones ——
1878

205 Carabus 4 1/2 / 10. This is a remarkable one
the Elytra being near 1/4 shorter than the body pointed
at the end and narrower than the body & high raised
it is black or black brown. glossy. deeply furrowed
the feet brown blackish with reddish hairs on the under
part of the bottom of the lower end of the shanks —
the lower part of the thorax has a broad flat
piece in place — long & slim built —

---

260 Julus. rather more than an inch (pretty) long & broad, of a
bright brick color. the upper part of the sheilds shaded
with brown — under part of the body very pale yellow or nearly
April 24 1818 white legs also very pale with fine white (short) hairs — legs
spotted or speckled with dark brown dots —
found in holes in the earth under stones — in moist places —

26 9 Staphylinus 4/10 dark brown thighs pale or amber colored shanks & tarsi darker or red brown. antennae 5/10 the length of the other thorax 4/10 red brown first joint very long head bright polished & slightly punctured

April 24 1818 shells deeply punctured — hind broader than the thorax little or no spines on the end of the shanks no spines on the tarsi of shanks fore tarsi narrow

---

26 8 Staphylinus 5/10 5½/10 clove brown rough vermicose or punctured hairy dirty & filthy looking swine like two or three long dark hairs on each side of the thorax

April 24 1818. a pale long hairs on the head. a dark brown band or shade down the middle of the thorax the lower part of the 5th segment of the back of the body pale found under stones in wet places in the mud head of a square form

slow hair all over the edges of the annulations spiny on the shanks hairy on the tarsi dirty & hairy all over delights in mud & dirt fore feet (tarsi broad, hairy long spines at the end of the shanks

269

head large & broad
across the eyes narrow accp the lip — tapers & very
narrow necked — thorax long & ~~one~~ bottle formed —
neck brown black
head & thorax highly polished — antennae brown, 2d joint
pale darker
April 24 thighs pale half next the brace brown
1878 shells pale yellowish red — darker toward the top —
May 13. a large oval black brown spot in the center or one half of
1878 it on each elytra with a triangular spot of the same
found just under the surface of the ground color. bared on the outer margin of the shells and a
waved broad black brown band at the base or end —
2 last joint of the
large black brown — found under stones in moist situations
form of the inner connected like a fiddle — the black spot
in the center of the elytra — convex & together with the
thorax neck & head highly polished — the whole of
the inner elytra & ~~all~~ is of a body — common — in number;
~~the lower part of the shells is~~ of a bright orange

---

270 Supposed to be Scarabaeus
a 2/10 long chunky form thick & broad black of a slight coppery
purple tinge legs black brown — found under stones
April 24 & dull in color — shells punctate
1878

b 1/4 . 1/4 long shorter form than the other broad very nearly as
broad as long pitchy brown black very glossy shells punctate
found under stones inactive — with two circular plates
of a reddish yellow color attached to the upper part of the
side of the abdomen by a fine short thread or hair —
legs reddish brown — (— lower edges of the elytra in the
light transparent red or tortoise shell —

271 Carabeus $\frac{7\frac{1}{2}}{10}$ long — Thorax thighs & shanks and first joint of the antennae a fine deep orange tarsi darker or orange brown, head bister brown, and punctured eyes dark chesnut brown 19 of the joints of the antennae April 25 1818. bister brown, first 4 joints of antennae hairy, tarsi of the front feet broad & hairy, elytra black blue or bengal indigo color minutely punctured dull not shiney, and slightly furrowed feelers brown. and of the last joint of the feelers which is formed yellowish brown, end of the abdomen truncated and a little longer than the shells. —— found under stones

272 $\frac{3''}{10}$ long dead or full ripe — shells orange, thorax and head reddish brown, eyes brown, antennae April 25 1818. & feelers dark brown, thorax punctured & rough with long reddish hairs — shells furrowed with large punctures and hairy a blackish band across the elytra thus the tips or shoulders of the elytra tipt with brownish black the lower end of the shells at the division of the shells brown black also legs close lighter towards the knees brown & under part of the insect brown

269 273 Melobontha ? ~~2/12~~ 4½ to 5/10 near 5/10. -found under stones in the ground

April 24 1818 Is of a clove brown color with hairy ~~a~~ ~~reddish~~ ~~yellow~~ ~~or~~ ~~orange~~ ~~spots~~ ~~on~~ ~~the~~ ~~sides~~ ~~of~~ ~~the~~ ~~abdomen~~ ~~&~~ ~~the~~ ~~sides~~ ~~of~~ ~~the~~ ~~breast~~ ~~&~~ ~~legs~~ ~~&~~ ~~the~~ ~~under~~ ~~side~~ ~~of~~ ~~the~~ ~~body~~ ~~&~~ ~~thorax~~ ~~&~~ ~~the~~ ~~antennæ~~

April 1818 May 1 1818 found just C. the surface of the ground

270 274 ~~2/12~~ 7/10 with 11 shields on the tail — Head small feelers or antennæ very short — feet size — dark flesh color.

April 24 1818 dark brown shadings on the shields very pale yellowish white underneath. the light which it affords proceeds from a small spot on each side at the vent is very faint bluish & has not the sudden blaze of the fire fly — found under stones

April 1818

275 Staphylinus. with irregular silver
band across the elytra — found under a dead cat

276 Scolopendra. has 42 feet

269 277 mason wasp.

April 181

May 181[illegible] found just the surf of the ly

c Is the cells in which it deposits an egg. two of these are finished and plastered over. the other is partly finished and shews the prints of the little workmans feet or clubs & the manner of its formation —

This solitary animal form its nest of mud or wet earth which it carries in its mouth and masons up a lengthened form three or four of these under and among stones which project so as to shelter it from the rain & frost — —

April 24 1818

b Pupa of above is whitish under the glass composed under the skin of small white blisters of a yellowish white china color —

April 24 1818

the larva is a worm of the color of the meat of an orange — the parent wasp deposits one egg in each cell. and places three or four spiders in it for its closes the cell & leaves the young to take care of itself

---

270 278 supposed Tenthred black all over.

April 24 1818

one sex smaller than the other — outer nerve of the wing broad & black with a large black ocellar spot antennae 9 joints wings folded over one another — body glossy. eyes black & oblong length of the specimen drawn 5/10 supposed female — of the supposed male not quit 4/10 say 3½/10 — found in numbers on the upper rails of a fence round — a grain field & orchard.

April 181

a single specimen only was found amongst 10 or 15 which had range between the wings on the two elevated parts on the thorax — and the rest of the insect black with a green metallic tinge over the black of the body — Is this a variety, a different species or the male or female — it was somewhat smaller than the one above — thorax & body of both species glossy —

b. April 26 1818 another specimen found — seven more this has an orange colored thorax with a brown spot in the centre

May 1818

279 Bee $\frac{5}{10}$ most powerful scent of honey. imparting the scent to phials a long time after it is taken but — Brown Black wings pale brown pale ley dun colored hair on the thorax and shoulders edges of the annulations on the under part of the belly black hairy — taken on the wing —

Sweet scented bee

April 25 1818.

May 14 1818 is number very plenty

found a number of bees on blossoms resembling the above in the strong honey smell. brown black hair yellowish blackish or raw terra sienna and black mixt together color, hairy on the face back head thorax and underpart of the thighs — body blackish shining or smooth free from hairs — found at the same time a number of No 302 supposed the mates of the above — they were smaller longer or slimmer bodies with the legs thinner & covered with dirty yellow hair or down —

280 Elater $\frac{4\frac{1}{2}}{10}$ two specimen the one somethg less as long and wing cases rather ~~shorter than~~ the body. —

April 28 1818 Common in number on fences —

this is a somewhat smaller insect than 212 slimmer built ~~greyer~~ more of a grey color. & rather has grey hair all over the insect above & beneath — the thorax too is longer & much and narrower proportion than that of 212 narrow across the thorax of a raw terra sienna tinge —

May 1 1818 numerous on boards on the ground.

May 19. 1818. in number on fences.

269 | 281 | April 28 1818.

Cimex 3/10; long & slim built pale straw colored with brown streaks legs pale dirty yellowish brown speckled or minutely spotted antennae reddish brown with reddish streaks on the elytra under wings blue. or highly iridescents —— under part of the body blueish with pale pink or lilac red on edge of the body — found on the long meadow fence

April 181

May 181[illegible] found [illegible] the surf[illegible] of the [illegible]

270 | 282 | April 28 1818

Tipula 3½/10

above brown color very long legs eyes brown, head ~~dun~~ grey in ~~the~~ back part of the thorax

April 181

found on the window at Hatters —— nerves strongly marked

283

April 28
1818

Fly · 2½/10 or 2¾/10

Speckled or dotted with black · eyes reddish or red brown
wings longer than the body and spotted with 3 large spots
near the outer nerve, & ~~body~~ full of large & small spots — its
motions are slow — moves a little at a time accompanied
by a short jump: found on the window —

& thorax body & blueish grey · spotted or

284

April 28
1818

Tipula Culex?

length ~~including~~ without the
plume 3½/10 with the plume 4/10. ~~wings~~ color brownish black
or dark lower part of the segments with ashen white bands.
thorax blueish grey with dark lines wings very pale with
a black irregular spot or broad nerves in the center near the
outer rein or nerve — antennae plumose — hind shanks
annulated with white ~~wings~~ — two specimens were found
near together one was a little smaller paler colored than the
two supposed to be male and female but they resembled one another in
the form & termination of the body — nerves of the wings
very faint wing pale & black nerve spot very dark & strong

269

285

supposed Dermestes $\frac{2}{10}$ long head bent under of a clove brown color. thorax punctured — elytra furrowed and coarsely punctured in the furrows — found on an old fence & on board. 2 specimen found this day a few rods apart possibly male & female the one not figured was redder or browner & very little smaller. —

April 24 1818

April 181

May 181[illegible] found [illegible] the [illegible] of the

270

286

April 28 1818.

April 181

The larva of these are a large coarse broad composed of numerous deep folds or plaits of skin worm or grub ~~$\frac{2}{1\ 3/4}$~~ inches long when full grown. of a pale yellowish white they have 8 laterally lateral spots of yellowish red brown with a pr broad plate of the same color and a spot on each side of the first fold next the head — they form in the fine mould of the rotten wood of the heart of trees — a cone resembling the outer covering of a half grown white walnut — probably cemented together in which they await the change to the perfect insect the specimen was found with 8 or 10 more in the heart of a rotten oak at the height of 60 or 70 feet — each inclosed in its proper cone — they are probably several years coming to perfection one was found not 1/3 the size probably a young one it had no cone — the under side is perfectly flat and convex on the back they are rolled up like a ball in the cone —

287 Ephemera 7/10 exclusive of the tails This Specimen was the first I met with
with this year it appeared to be rather weak it was of
a dusky yellow with darky spots and short scarce nerves on
April 30 the clouded rim or arm the inferior wings were very short
1818 tail as long as the insect

back ward Spring

288 female Coccus supposed, 1/10 red yellowish whitish covered with white powder
or down these are found in great numbers under stones
in the earth immediately under the stones and usually accompanied
April 30 by the small yellow ant, Query? does the ant prey on them or
1818. not they are sluggish & inactive puffed up & lifeless —
there are others about 1/3 or half the size of these of a red color.
powdered white or covered with a white down these are
attached in a mass covered with down to the under part of stones on the
ground in moist places the ants appear to be on them
& about them —

269

289

May 1. 1818.

took several specimen this day one in the wood on a pine tree

April 181

May 181 found pu the sur of the

Phryganea. 2 inches long in some specimen a little less in others a 10 some are ½ an inch less than 1/3 more brownish grey. horns or antennae 1/3 inch long tail horns half the length of the antennae thick or coarse ted or orange neck and under the lower part of the thorax. numerous nerves in the wings — body pale yellowish on the back and belly with darker lateral shadings The general color of the wing of an ash color.

The larvae are six footed brown insects with lateral small yellow dots. and are the favorite food of the shad on which they fatten as they ascend the Susquehanna to which the shad owe their superiority over lake to the tide water shad. About the first of May these worm forsake the water & crawling along the shore ascend a foot or two some stick of timber or tree & their burrow there shall come out inhabitants of another element they are however weak on the wing & very short lived they are in immense numbers in the larva state for the lay many egg but those who escape the depredation of the fish in one element & of the birds in their winged state are nearly barely sufficient for the propagation of the species. I think that the abundance of these flies denotes an abundance of shad — —, undergo the change in the night probably the sun in the day would dry on the shell so that they could not get out.

270

290

May 2. 1818.

April 181

Moth Phalaena 4/10. superior wing of a dark grey with dusky waves with a dark rich brown spot in which there is a couple of golden dashes & dots also the outer or base of the wing — a black line at the base & fringed — underwings dusky brown & deeply fringed ——

291 Meloontha $\frac{8\frac{1}{2}}{10}$ May bug of a pale or yellow brown
found under stones very common — paler underneath —
May 1 eyes dark brown pie shanks tooked tiny yellowish hair
1818 on the breail they are found in a cell immediately under
stones in green sward or meadowland — the shells are very
thin flexible between coriaceous and flexible

292 Purpx of Sphinx found in digging the ground
about a hop vine —

April 20

269

293

$\frac{3}{10}$ long — This is an active little insect found on the window in my back room — they are hairy dun or whitish colored hairs on the head thorax shells & legs body of a rose red color. — The color of this insect thorax & head deep ritten orange red — upper part of the shells orange yellow. lower part black with an arched broad band whitish or greyish yellow band and another band at the tips. of the same color

May 2 1818

May 4 1818 caught another

April 181

May 181 found

270

294

Tipula. body $\frac{4}{10}$ of the wings $\frac{5}{10}$ long. Tipula. dark brown red brown wings darker towards the tip somewhat yellowish on the thorax with dark longitudinal lines, dark eyes — head yellowish horns 3 times the length of the insect

May 3 1818. found several specimens this day.

295 Phryganea ——— one inch & 1/10 long

May 3 1818 head yellowish dark shade between the eyes on the back of it
wings transparent yellowish

b the case of the insect or larva. found sticking on timber
arks &c near the water they leave the water a day
or two after No 289 are however so numerous as
the 289.

c one of the superior wings magnified ——— the veins
are rather strongly marked the wings are transparent yellowish

296 Cerambyx or. (?) 1/10 of an inch long. antennae 11
joints nearly as long as the insect. feelers & shaped thorax raised
indented in the middle pale yellowish or ochre —
May 4 1818 with a horn on each side or in the upper side general color
of the insect dark raw terra sienna with irregular ill defined white spots on the elytron
thighs thickened
or club shaped at the knee end. hind shanks with a tuft
or bump near the tarsi ——— shells furrowed with minute whitish spots
in the furrows ——— found in an out house in the garden
(back of the insect rounded) about 2 tenths of an inch long. ♂ (———)

* rather too short drawn in the drawing.

269

297 Spider — long bodied with pretty long legs —
length exclusive of legs $\frac{2\ 1/2}{10}$.
thorax and legs of a burnt terra sienna brown — or
burnt umber. body flesh color ornamented with dark brown
marking down the center in the form of a drop of a festoon
a double brown line down the middle of the thorax
May 8 1818 the end of the feelers noteled — the thighs with rayes
Spr 18 and hairy shanks annulated with brown and spiny —
May 18 (a domestic spider) —
found
the
of the

298 Small bee — $\frac{3}{10}$ to $\frac{2\ 1/2}{10}$ long — found in numbers on the
flowers of the Dandelion; the color of the insect is of a darkish
270 color with a greenish tinge on the thorax and head; the wings
May 8. are shorter than the body, fold over
1808. one another and are strongly iridescent — the color of
this insect is a greenish bronze. body brown — with
narrow bands of a lighter color — head & thorax
bright body brown the upper part next the thorax
polished & shining; the lower end hairy —

length 2/10 in some specimens rather more

294 (♀) shining glossy (black) rounded on the back & thorax
found in numbers in decayed or rotten vegetables (putrid beets)
May 8 very subject to a small reddish brown tick —
1818 shells slightly furrowed with minute punctures —
Query is this the same as 181? Is not this more
rounded & raised smaller & thorax rounded before, habits different
May 21 and generally thicker —
1818
fine weather
very numerous.

---

300 length 3/10 to 3½/10 — under
May 9 part and leg: black wings blackish elytra and thorax
1818 carmine color with three grooves on each elytra and a
double row of indented dots in the grooves — the antennae
of equal thickness. 11 joints. thorax marked with five
brown colored broad indentures

29 301 C. cincdela $\frac{5}{10}$ long. This insect is shining green the head thorax and down the middle of the wing cases playing into bright green blue & purple the outer edge of the length of the shells with 3 white spots one about half way down the other two near the end of the shells the last one being of a angular or lengthened form above the lips & jaws. eyes brown. lips. or plate & jaws white. under side of a blueish green

May 10 1818.

302 Apis. not quite $\frac{4\frac{1}{2}}{10}$ long brown black glossy. head & thorax & breast & below dirty yellow hairy. leg/ thin & covered with dirty yellow hair. — This & 299 were numerous found in numbers about the gooseberry blossoms. perhaps the same species but different sexes —

303 *Staphylinus* $\frac{2\ 1/4}{10}$ long — head black brown thorax and elytra reddish brown — and two last annulations of the body — is of a lengthened form — 11 annulations next the body clove brown — head thorax & wing cases polished — fine lateral spines or hairs on the cheeks, thorax & on the last two annulations — found under boards —

May 10 1818

May 15 1818 The other sex (at last supposed so) resembles the above in every thing except the last annulation being longer or more extended in two short last appended to it — this last specimen when living after death resembled the other in the termination of the body exactly — so that it probably was the same.

---

304 *Acanthia* common bedbug. $\frac{2}{10}$ long — $\frac{1\ 1/2}{10}$ broad —

May 10 1818

Cucujus:
brown — thorax ~~marked~~ ~~punctured~~ with 2 ~~row~~ round spots of
a drab color — elytra ~~furrowed~~ ~~interrupted~~ gutter
May 11 1818 or longish square dots in the furrows. ~~with three~~ ~~stantu~~
rows of square drab spots — ~~and~~ found on a fence
a specimen was on the other side of the river the same
day supposed the same species but perhaps different sex
which resembled the ~~other~~ except in the number & disposition
of the drab spots on the shells — but was only 3/10 long — it
was found also on a fence

~~5/10~~ ~~small~~ Pine borer ~~1/10~~ long this is the insect
that makes the numerous small holes in the bark &
May 1818 sap of white pine log ~~it~~ the elytra are lunulated or abruptly
terminated it is of a clove brown color some specimens are
of a more redder brown and when under the bark in March
~~they~~ many are of a yellowish color. ~~the thorax~~ is nearly
~~[illegible]~~ as long as the elytra the shells are furrowed & are
roughly punctured the thorax punctured; the insect is of a
lengthened form and round body, head bent under

307

3/10 long of a clove brown color
marked with 10 minute whitish spots on the thorax arranged nearly
May 11 1818 in the form of a circle — with a broad whitish band
about one half the length down of the elytra or the
upper part of the shells in which band there are six distinct marked brown spots and four less distinct spots
May 21 1818 very numerous in my hall — as of this writing. next the thorax

These are very destructive to Cabinets of Insects — which
they will totally destroy in a short time
They also infest dried or smoked meat ———

308

Ichneumon or long tailed wasp — 2/10 long antennae same
length tail also same length —
May 13 1818 general color Olive brown
tip, jaws joints before the thighs and soles of the feet legs & tarsi
reddish — ends of the hind shanks and tarsi dark brown —
wings when they enter the body fold close a active lively
motioned insect — wings when at rest flat & overlay
each other and highly iridescent ——— antennae
tail nerves of the wings dusky on the clove brown
with a short lateral yellow band on the upper side of
the thorax — wings when at rest horizontal &
folded over each other ———
overlay

309 moth ? $\frac{2}{10}$ long ash color. ~~[illegible]~~ hind
thanks with 4 long spines plated on pair
May 13 superior wings pale ash, under wings long fringed —
~~April~~ 13 with two longitudinal brownish streaks on each superior wing
1818. at the thin lower edge
superior wings fringed — under deeply fringed —
M under wings brite brown spotted with whitish.
18

310 $\frac{\text{N.S.}}{\text{[illegible]}}$ somewhat similar in [illegible]
form habits &c to 293. is it a variety in the marking?
[illegible] a different sex [illegible] was found on a board fence
May 13 and active insect continually in motion
1818 marked on the shells with a black waved broad band across
the middle of the shells a broad ash colored band below
it and a narrow waved ash colored band above it; ends
of the shells broad black band. shoulders of the shells reddish
blended below into a black narrow band — thorax head,
first joint of antennae reddish, the half of the thighs next
the body red knees dark brown thanks & antennae brown
joints of the legs 4. under part of the head thorax &
body red —

311

Scarabaeus

$\frac{6}{10}$ long with brownish wing cases fluted with short thorax finely punctured

long wings and reddish nerves. transverse cuts in the the flutes with four raised ~~spots~~ point on the front of the thorax and an indistinct one on each side a little behind the middle resembling somewhat the eyes of a spider with a short pyramidal horn on the back of the shovel. front of the shovel slightly divided

May 13 1818. on the wing

general color black brown — is this the a different sex of 173 or a different species

312

$\frac{5}{10}$ long. Supposed same genus as 214.

whole insect dark brown — head broad, thorax with points, cut square below

shell furrowed & punctured, tarsi short, antennae beaded three last joints larger than the rest — whole insect very flat

May 5 1818

313 Asilis or Empis ? $\frac{4}{10}$ long. clove brown. thorax greyish balancers whitish straw color, wings pale reddish yellow & clear color with dark shadings along some of the nerves — wings when the insect is at rest flat or horizontal May 14 1818 & folded over one another found on a stone wall

314 Phryganea — length including wings $\frac{6}{10}$ general color the sides of the body and annulations of the body marked with dark raw terra sienna — eyes brown. $\frac{3}{10}$ long. antennæ half the length. head yellow marked between the eyes resembling the letter H thorax with a dark longitudinal broad mark on each side leaving a yellow or straw color band down the center. — wings transparent & of a pearly yellowish cast legs pale clove brown May 14 1818 has dots arranged in the form of the letter H between the eyes found on the window of back parlour

316

May 15 1818

Bee ~~Bee~~ perhaps a variety of the Humblebee one inch long — black color; ~~the thorax & sides~~ covered with long ~~straw~~ yellow colored hair. ~~two tufts of the same color on the~~ top of the upper annulation of the body — ~~and~~ with some hair of the same color on the upper part of the 2nd joint the rest covered with long black curled hair. — wings ~~the~~ black brown & gofsy —

316

May 15 1818

$\frac{8}{10}$ long — same genus as ~~this~~ and shanks red brown — ~~and~~ thorax shells & head with ~~that~~ red hair — found floating on the surface of the water in which it appeared to have fallen — legs hairy — clumsy slow moving insect — head bent down — under part hairy

317

May 16 1818.

This Species is full twice the length of No 306, to which genus it belongs, or of the body alone thrice the size it resembles the former in color but is hairy on the thighs, thorax & elytra — and of the under part of the insect & it is cut off or dug out behind in a sloping manner & toothed with teeth sticking out on each side — & long hair projecting from it — it is of a redder color than 306

318

Plants & Flowers
to be introduced in the work

No. 1. The mountain pink — Fly 229. found on or near it flowers April 30.
2 Crataegus Crus galli
3. Crataegus Cordata
4. Iris Virginica — with a tibellula or other aquatic larva suspended from it
5 Wild Columbine
6 Bignonia Radicans —
7 Coral Honeysuckle. or wood bine sphinx —
8. Yellow sweet scented Honeysuckle or woodbine sphinx —
9. Plum with leaves & stalk. curculio.
10 Apple blossoms. meloe —
11 Cucumber plants with the Galeruca Cucumeris

Colors

White — albus.

azure blue
aurora colour
purple
violet
pale blue
downy.

black

depressed depressus sa
greyish brown

cinereous.

hyaline glassy - hyalinus
glossy

green
greenish

brown
brownish
golden yellow aureus
yellow
yellowish / flavescente
chesnut brown
dusky brown
orange
red.
rufous.
pale rufous
amber coloured
black blue
blue
bluish black
bluish grey
ash coloured
bluish-ash

line?

shield clypeo.
belt

References

Light animal insects see Rees Cyclop.
Lice - see Rees Cyclop.
insects which attack fruit trees see Columb Mag for Feb 1789 page 121.
Smut in wheat &c (to smut seed grain pure) do do 121.

1817 was a most extraordinary wet season in Lycoming & generally throughout Pennsylvania & uncommon sized, musquitoes — observe the flying Grasshopper. great flights — fond of ploughed fields — dusky appearance

In 1807 or the year of the great eclipse of the sun a species of Grasshopper [illegible] Gryllus Migratorius or a variety of it) appeared suddenly in myriads in (parts of the) Lycoming County cutting off and devouring the small crops, garden vegetables particularly fond of (large heads of) lettuce &c they came too late to injure the grain, but the tassels of the maize was all cut-off after remaining about 4 weeks they collected together & went off in great clouds they were of the largest size of grasshopper and say 2 or 2½ inch long Mrs Clark informed —

Pea Fly - see Agricn S Phila p. 317
Curculio Fruit — do — 317
do — do addenda 34.
Peach worm see do — 183.
do — do 11
do — do 15

Silpha

The Insects of this genus are remarkably flattened or depressed. and broad. The larvae are hairy & inhabit decaying & putrid animal matter — The abdomen is elongated and slender towards the vent projects considerably beyond the shells —

I Silpha 1/2 inch length 1/3 inch breadth.
color black, or rusty black
found in company with the succeeding species.

II Silpha 3/4 of an inch length 1/2 inch breadth
color black. thorax bright yellow. with a black star in the center

III

III Silpha. length breadth
color black, thorax red.

IV Silpha

These insects are very nimble hiding themselves on the approach of a person

The larvae are elongated and hairy and as well as the perfect insect exceedingly offensive in smell. from the putrid matter in which they harbour

Works on Entomology
Kirby, Entomology to be had of Matthew Cary —
Knoch
Melsh [illegible] talogue —
Dono [illegible] ica Ins.
di [illegible] inen

flavus yellow.
fulvus deep orange inclining to red

Singular Case.

On Saturday last, as Mr. Miller, jun. of Westwell, was going from that place to Stablehurst, he was attacked in the ear by a blow fly, which causing irritation he rushed it in the cavity. On the following day he was seized with pains in the head, which continued without intermission, producing almost distraction until Monday morning, when in the height of agony, a friend advised the pouring of spirits of Geneva into the ear, which was done, and, to the astonishment of the spectators 40 large maggots exuded from the ear, where they had been generated during the two days.

[*Observer, Sept. 28.*

FALL PLOUGHING.

A Raleigh (N. C.) paper recommends fall ploughing to be an invaluable preparative for a corn crop the next year. The stalks and roots of clover, grass or weeds, by being ploughed under, form during the winter, an excellent manure: ploughing the ground in high ridges is found to be best; especially in wet or clay soil. The earth by being thus ploughed in deep furroughs and more exposed to the air, not only improves in goodness, but becomes dry much sooner in spring. This preparation also makes a great saving in hoeing corn—the roots becoming rotten, the ground light and free from weeds. The poughing of ground in the fall also exposes the ball containing the eggs of the corn grub or black worm so that they are either destroyed by the sun or the birds.

The practice of fall ploughing is becoming pretty general in Pennsylvania, and it is remarked that the crops of corn are vastly greater than produced by spring ploughing. The ploughing of this ground may be put off if necessary, until the other business of the fall is finished. At any time before the earth is locked up by frost will answer.

Calculation
2 plates per mo or 8 plates each number every 4 months
or 24 plates per year
3 parts ~~each~~ volume or 1 vol per year —
2 dollars per number or 24 dollars per an subscripta
& 3 years publishing —